

EXHIBIT F

**IN THE UNITED STATES DISTRICT COURT
FOR THE SOUTHERN DISTRICT OF NEW YORK**

SERTA SIMMONS BEDDING, LLC and
DREAMWELL, LTD.,

Plaintiffs,

v.

CASPER SLEEP INC.,

Defendant.

Civil Action No. 17-cv-7468

**EXPERT REPORT OF BERNHARD KUCHEL
REGARDING VALIDITY AND MATERIALITY**

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Exhibit 11	French Patent Publication No. 2 720 245 (Lambert)

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**I. SUMMARY AND BACKGROUND**

1. I have been retained by Defendant Casper Sleep, Inc. (“Casper”) as a technical expert to provide opinions regarding the validity of the following patent claims (collectively, “the Asserted Claims”) from three patents (“the Asserted Patents”), and the materiality of prior art references that were not before the patent examiner who allowed the Asserted Claims:

Asserted Patent	Asserted Claim(s)
U.S. Patent No. 7,424,763 (“’763 patent”)	1, 4–9, 11–12
U.S. Patent No. 7,036,173 (“’173 patent”)	5, 6, 8
U.S. Patent No. 8,918,935 (“’935 patent”)	10, 13

It is my opinion that all of the Asserted Claims are invalid under one or more of 35 U.S.C. §§ 102, 103, and 112, and that the references I address below were material to patentability of the Asserted Claims. My opinions and the bases and reasons for them are set forth in this report.

II. QUALIFICATIONS

2. I earned a Bachelor’s of Mechanical Engineering with High Honors from The Georgia Institute of Technology in 1986, and I have over thirty years of professional experience in the mechanical engineering field. Since 1995, I have focused my career in the mattress and bedding industry.

3. I have been a lead research and development executive involved in designing, specifying, testing, and bringing to market new mattress and foundation technologies for various international manufacturers, including mattress manufacturers Simmons Company (1995–2004) and Sealy, Inc. (2005–2008). During my career as an R&D executive, I led and managed teams of engineers and designers to develop and refine numerous products and innovations that relate to all aspects of mattress, foundation, and bedding design. I coordinated and supervised all aspects of mattress product design, testing, and development during my tenure as Director of

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Advanced Technology and Product Development at Sealy and as Director of Process Development at Simmons Company.

4. Since 2008, I have worked as an independent consultant, consulting on various topics, such as product design, process development, and manufacturing methodologies, including for mattresses and other bedding products. I am listed as an author of eight U.S. Patents relevant to the design and manufacture of mattresses and have authored or contributed as an author to numerous pending patent applications. Thus, I am very familiar with the design and development process for creating mattresses, including all-foam mattresses.

5. A detailed summary of my educational background, professional experience, and cases in which I have testified as an expert witness is set forth in my *curriculum vitae* attached as Appendix A. My CV also contains a full list of my publications and a list of all other cases in which I have testified as an expert during the previous four years. I reserve the right to rely on anything in my *curriculum vitae* to demonstrate my qualifications to serve as an expert in this matter.

III. MATERIALS CONSIDERED

6. In addition to my experience in this field as summarized above, the materials that I considered in forming the opinions set forth in this report include all references cited in this report as well as the list of materials attached as Appendix B to this report.

IV. APPLIED LEGAL STANDARDS

7. I am not a lawyer or legal expert, and I am not offering any opinions regarding the law. I have, however, been informed by counsel for Casper of the legal standards applicable to the issues that I have been asked to examine and have applied those standards in formulating my conclusions. I have also been provided with the Court's orders and opinions regarding claim construction, and have applied those constructions in formulating my opinions.

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A. Claim Construction

1. Claim Construction Principles

8. I understand that there are two types of claims: independent claims and dependent claims. I understand that an independent claim stands alone and includes only the limitations it recites. I understand that a dependent claim, on the other hand, is a claim that depends on another claim. I understand that dependent claims include all of the limitations recited in the dependent claim as well as any limitations included in the corresponding independent claim.

9. I understand that, before making a determination of whether the Asserted Claims are valid, the claims must be construed on a limitation-by-limitation basis. I understand that the Court has construed some terms or phrases as a matter of law. I understand that claim terms not construed by the Court are to be afforded their plain and ordinary meaning as used in the claims in the context of the specification and as would be understood by a person of ordinary skill in the art at the time of the invention. I understand that this person of ordinary skill in the art at the time of the invention is assumed to have read the claim terms in light of the entire patent record, including the other claims, the patent specification, and the patent prosecution history. I have interpreted the claim terms not construed by the Court in light of this understanding.

10. I understand that, to properly understand the meaning of claim terms, one should first consider the intrinsic evidence, which includes the claim language itself, the patent specification, and the patent's prosecution and/or post-issuance history before the Patent Office. For example, the patent specification may show that the inventor used words or terms to have a special definition. Specifically, I understand that where the specification reveals a special definition given to a claim term by the patentee that differs from the meaning it would otherwise possess, the inventor's lexicography governs. I understand that the prosecution history of the patent may also provide guidance in construing a claim term. For example, the prosecution

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history may show that the patent applicant might have limited the scope of some or all of the claims during prosecution, either affirmatively or by implication.

11. I understand that if the intrinsic evidence is not conclusive regarding the meaning of a particular claim term, extrinsic evidence may also be used to determine its meaning. I understand that extrinsic evidence may be used, for example, to help determine what a person of ordinary skill in the art at the time of the invention would understand the claim term to mean. Extrinsic evidence may include, for example, dictionaries, technical treatises, journals, articles, or expert testimony.

2. Claim Constructions Issued in this Case

12. I understand that the following terms or phrases have been construed by the court in this case. I have applied these constructions in my analysis herein.

Term or Phrase	Construction
“channel”	“a long, narrow groove”
“within”	No construction necessary.
“body”	“physical structure”
“at least one of the top and bottom surfaces including a plurality of channels”	No construction necessary.
“does not entirely fill the channel”	No construction necessary.
“assembling the [plurality of] rectangular foam pieces to form the body having a channel in the region”	“assembling the [plurality of] rectangular foam pieces to form the body and to form a channel in the region”
<i>order of steps</i>	The methods do not prescribe a sequence of operations

B. Presumption of Validity

13. I understand that, in deciding whether to issue a patent, the United States Patent and Trademark Office (“USPTO”) examines the patent specification, its claims, and relevant prior art references to determine whether the patent application and its claims meet the requirements for patentability. I understand that the law recognizes that claims issued by the USPTO are presumed valid. I also understand that this presumption of validity can only be

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overcome if the party seeking to invalidate the claim proves that the claim is invalid by clear and convincing evidence.

C. Anticipation by Prior Art Under Sections 102(a), (b) and (e)

14. I understand that a person cannot obtain a patent if someone else already made an identical invention, which is referred to as “anticipation.” I understand that to anticipate a claim, each and every element in the claim must be, as properly construed, present in a prior art reference either expressly or inherently.

15. I understand that, in determining whether an element of the claimed invention is found expressly in the prior art, one should take into account what a person of ordinary skill in the art would have understood from his or her examination of the particular prior art. I understand that, to establish anticipation through inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill in the art.

16. I understand that under 35 U.S.C. § 102(a)¹ an inventor is not entitled to a patent if “the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for patent.”

17. I understand that under 35 U.S.C. § 102(b) an inventor is not entitled to a patent if “the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of the application for patent in the United States.”

18. I understand that under 35 U.S.C. § 102(e) an inventor is not entitled to a patent if “the invention was described in — (1) an application for patent, published under section 122(b),

¹ Throughout this report, when I refer to statutes, I refer to those statutes that were in existence at the relevant time that apply to the Asserted Claims.

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by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent.”

D. Obviousness Under Section 103

19. I understand that, for a claim to be invalid as obvious, the party asserting invalidity must identify prior art references that alone or in combination with other prior art references would have rendered the claim obvious to one of ordinary skill in the art at the time of the invention. I understand that obviousness is a question of law based on underlying factual findings, including (1) the scope and content of the prior art; (2) the differences between the claims and the prior art; (3) the level of ordinary skill in the art; and (4) secondary considerations of non-obviousness.

20. I understand that a conclusion of obviousness may be based on a combination of prior art references, particularly if the combination of elements does no more than yield predictable results. I understand that it can be important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in a way the claimed invention does.

21. I understand that in determining whether a combination of prior art references renders a claim obvious, it may be helpful to consider whether there is some teaching, suggestion, or motivation to combine the references and a reasonable expectation of success in doing so.

22. I understand that the following exemplary rationales may lead to a conclusion of obviousness: the combination of prior art elements according to known methods to yield predictable results; the substitution of one known element for another to obtain predictable results; and the use of known techniques to improve similar devices in the same way.

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23. I understand that in evaluating whether patent claims are invalid as obvious, secondary considerations of non-obviousness are considered. I understand that the secondary considerations of non-obviousness are considered with the balance of obviousness evidence in the record to act as a check against impermissible hindsight bias. I further understand that the patentee must establish a nexus between the merits of the claimed invention and the evidence of secondary considerations of non-obviousness in order to give such considerations substantial weight in the determination of non-obviousness.

24. I understand that the burden of presenting evidence of secondary considerations of non-obviousness is on the patentee. I also understand that the proponent of the evidence of secondary considerations bears the burden of showing that a nexus exists between the claimed features of the invention and the evidence offered to show non-obviousness.

25. I understand that the secondary considerations of non-obviousness include commercial success, long-felt but unsolved needs, copying, praise, teaching away from the claimed invention by the prior art, unexpected results, industry acceptance, failure of others, and skepticism by experts. For example, I understand that the fact that another person contemporaneously and independently created the same invention claimed in an asserted patent can serve as an indication that the invention was obvious.

E. Invalidity Under Section 112

1. Lack of Written Description

26. I understand that under 35 U.S.C. § 112, ¶ 1, in order to be valid, a patent claim must satisfy the written description requirement. I understand that to prevail on a written description challenge, Casper must demonstrate by clear and convincing evidence that the specification fails to meet the law's requirements for written description of the claimed invention.

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27. I am informed that in the patent application process, the applicant may keep the originally filed claims, or change the claims between the time the patent application is first filed and the time a patent is issued. An applicant may amend the claims or add new claims. These changes may narrow or broaden the scope of the claims. I understand that the written description requirement ensures that the issued claims correspond to the scope of the written description that was provided in the original application.

28. I understand that the written description requirement proceeds on a claim-by-claim basis and is satisfied if a person having ordinary skill reading the original patent application would have recognized that the inventor actually possessed by the filing date of the original application the full scope of the claimed invention as it is finally claimed in the issued patent. I understand that in deciding whether a claim satisfies the written description requirement, the description is considered from the viewpoint of a person having ordinary skill in the technology of the patent when the original application was filed.

2. Non-Enablement

29. I understand that under 35 U.S.C. § 112, ¶ 1, in order to be valid, a patent claim must be enabled. I understand that for a claim to be enabled, the specification of the patent must teach those skilled in the art how to make and use the full scope of the invention described in a claim without undue experimentation. I understand that the enablement analysis proceeds on a claim-by-claim basis and is determined as of the priority date of the patent.

30. I understand that, in determining whether the experimentation necessary to practice the invention is undue, a number of factors, including the following, may be considered: (1) the quantity of experimentation necessary; (2) the amount of direction or guidance presented; (3) the presence or absence of working examples; (4) the nature of the invention; (5) the state of the prior art; (6) the relative skill of those in the art; (7) the predictability or unpredictability of

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the art; and (8) the breadth of the claims. I understand that these factors are not exhaustive but illustrative only, and not mandatory to the enablement analysis.

3. Indefiniteness

31. I understand that, in order to be valid, the claims of a patent must be sufficiently definite that one skilled in the art can determine the precise limits of the claimed invention. I understand that patent claims are invalid as indefinite 35 U.S.C. § 112, ¶ 2, if the claims, read in light of the patent's specification delineating the patent, and prosecution history, fail to inform, with reasonable certainty, those skilled in the art about the scope of the invention. I understand that a patent claim must be precise enough to afford clear notice of what is claimed, thereby apprising the public of what is still open to them.

F. Materiality

32. I understand that patent applicants, prosecution counsel, and patent owners appearing before the USPTO owe a duty of candor and good faith to the USPTO, such as during prosecution of a patent or in post-issuance proceedings. I understand that a breach of this duty may constitute inequitable conduct if an applicant, with intent to mislead or deceive the USPTO, fails to disclose material information or otherwise engages in egregious misconduct such as submitting materially false information to the USPTO during prosecution of a patent. Information is "material" to a claim if the claim would not have been allowed had the information been disclosed. I understand that a reference is not cumulative of other references before the examiner if it contains a more complete combination of the elements claimed in the patent than anything else before the USPTO.

V. PERSON OF ORDINARY SKILL IN THE ART

33. I understand that validity of a patent is to be analyzed from the perspective of a person of ordinary skill in the art at the time of the invention. I understand that a patent may claim priority based on the filing dates of prior related applications such that its priority date

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precedes its filing date. In those circumstances, validity will be analyzed from the perspective of a person of ordinary skill in the art as of the priority date. In such a circumstance, the same qualifications would apply, but the available prior art would be restricted to what was available prior to the priority date.

34. With respect to the Asserted Patents, I understand validity will be analyzed from the perspective of a person of ordinary skill in the art on or around October 17, 2002. Based on my education and experience, I am very familiar with the level of knowledge that one of ordinary skill would have possessed during the relevant period of time. In my opinion, a person of ordinary skill in the art would have a Bachelor's degree in a field relevant to mattress designs (such as mechanical, chemical, or manufacturing engineering or design), as well as two or more years of experience designing mattresses or manufacturing processes for mattresses. In reaching this opinion as to the qualifications of the hypothetical person of ordinary skill in the art, I have considered the types of problems encountered in the art, the prior art solutions to those problems, the rapidity with which innovations are made, the sophistication of the technology, and the educational level of active workers in the field.

35. I understand that as part of the preliminary injunction proceedings, Plaintiffs' expert, Mr. Clift, opined that "on or about October 2002, a person of ordinary skill in the art ('POSITA') relating to the technology of the Asserted Patents would have had a bachelor's degree, typically in mechanical, chemical or manufacturing engineering or design. Alternatively, a POSITA would have had an associate's degree in design or manufacturing technology and several years of experience working in the mattress industry." Clift Decl. ¶ 13. My opinions would not change if I applied this level of ordinary skill in the art.

36. Based on my educational and employment background, I am qualified to provide opinions concerning what a person of ordinary skill in the art—under either my definition or Mr. Clift's prior definition—would have known and understood on or about October 2002.

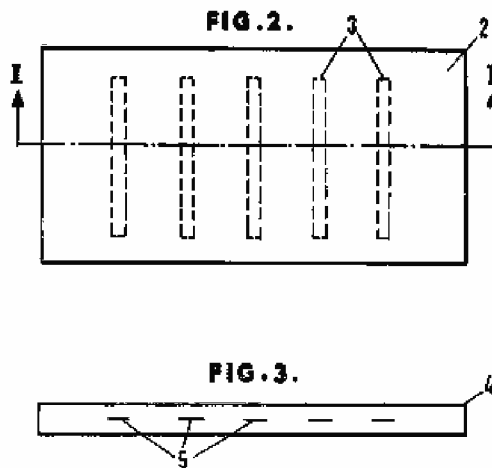
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Indeed, with my education and employment, I would have been considered a person of ordinary skill in the art on or about October 2002 under either definition.²

**VI. TECHNOLOGY BACKGROUND AND STATE OF THE
ART AT THE TIME OF THE ASSERTED PATENTS**

37. Inventor Richard Gladney, as corporate representative for Plaintiffs, agreed that he did not invent foam mattresses, foam mattresses with cutouts, or foam mattresses in which an object was inserted into the foam. *See* Gladney Dep. Tr. at 65:10–69:16. He testified, instead, that he was the first person to invent a foam mattress with an object inserted into a *channel*. *Id.* at 65:18–20; 69:9–12; *see generally id.* at 85:21–101:15. But in fact Mr. Gladney did not invent this feature; instead it was in fact known and practiced in the prior art before the Asserted Patents. While in no way intended to be exhaustive, below I describe several background prior art references that taught using depressions, such as channels, and inserts in mattresses well before the Asserted Patents, beginning all the way back in the 1960s:³

- **CH 407451 (Schroeder).** Schroeder, published on August 31, 1966, discloses reinforcing the body of a mattress by inserting rigid slats (3) into slots (5) on the side of the mattress.

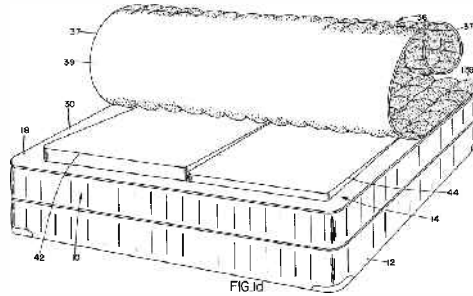


² I note that inventor Richard Gladney would not have been a person of ordinary skill in the art when he conceived of the alleged invention. *See* Gladney Dep. Tr. at 19:7–20:2.

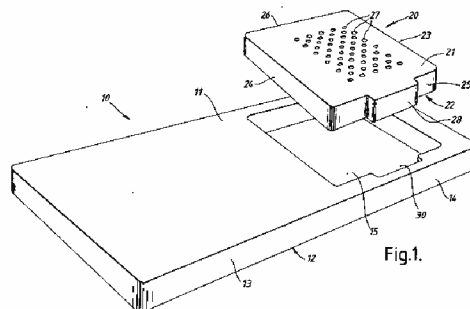
³ *See* Gladney Dep. Tr. at 65:18–20 (“Q. Do you think you invented the first foam mattress with channels? A. I do.”).

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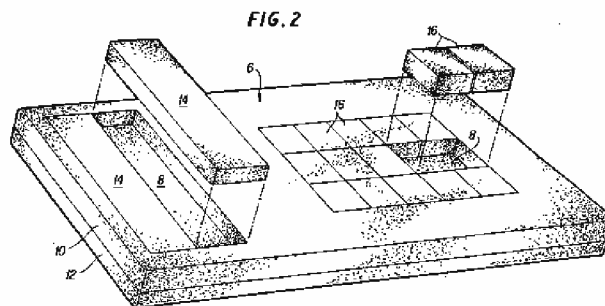
- **U.S. Patent No. 4,449,261 (Magnusson).** Magnusson, which issued on May 22, 1984, is assigned to Simmons U.S.A. Corp. (a predecessor to Plaintiff Serta Simmons Bedding) and names as inventor Robert A. Magnusson, who was President of Simmons U.S.A. at the time and later became CEO. Magnusson discloses a mattress with a recess or cavity that can receive different foam mattress cores to “adapt[] the mattress’s firmness to allow two people, having different predispositions in regard to firmness, to sleep on the same bed.” See Magnusson at 8:33–57, Fig. 1d.



- **U.S. Patent No. 4,536,906 (Varndell).** Varndell, which issued on August 27, 1985, discloses a mattress with “a removable foam insert which fits in an aperture cut in the head portion of a foam mattress body.” Varndell at Abstract.

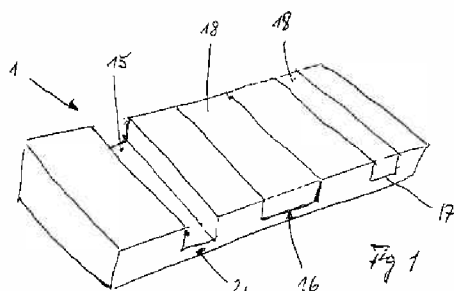


- **U.S. Patent No. 4,706,313 (Murphy).** Murphy, which issued on November 17, 1987, discloses a foam mattress “having recesses at positions corresponding to the locations of protruding portions of a patient.” Murphy at Abstract. The user can selectively place foam blocks (e.g., block bodies 14 and 16) in the recesses. *Id.*

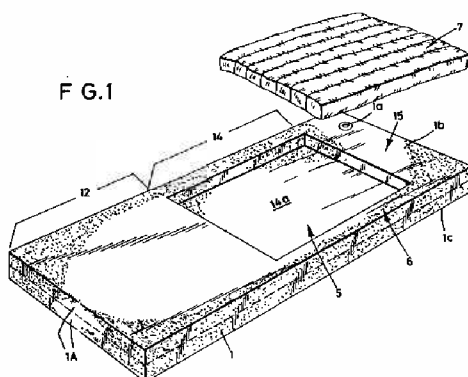


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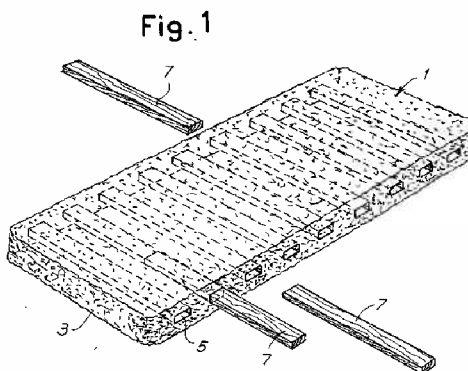
- **DE 4136369 A1 (Feldmann).** Feldmann, published on November 5, 1991, teaches forming depressions (e.g., 15, 16, and 17) in a foam mattress that are filled with foams of different hardnesses.



- **U.S. Patent No. 5,107,558 (Lück).** Lück, which issued on April 28, 1992, describes a foam mattress that supports a person's torso "by a rectangular insert 7 which is removably receivable in a complementary socket or recess 5 provided in the upper side 1b and extending into the intermediate portion 14. The length of the recess 5 and insert 7 preferably at least matches the full length of the spinal column of the occupant." Lück at 4:44–51.

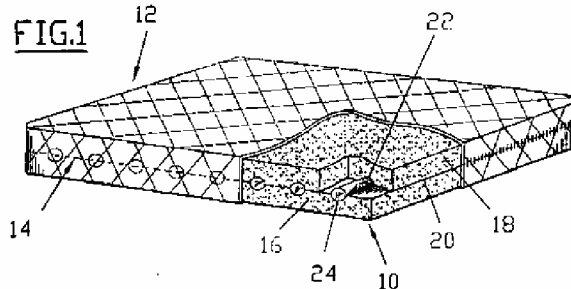


- **EP 0637426 A2 (Banchi).** Banchi, published February 8, 1995, describes a multi-layer mattress with at least one layer "crossed by transverse straight channels (5)." Banchi at 2:47–48. "Elements (7) may be inserted at any time within at least some of such channels." *Id.* at 2:50–51. The elements can have "various transverse bending and compression characteristics." *Id.* at 3:5–7.

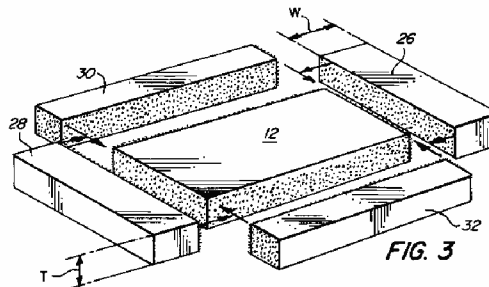


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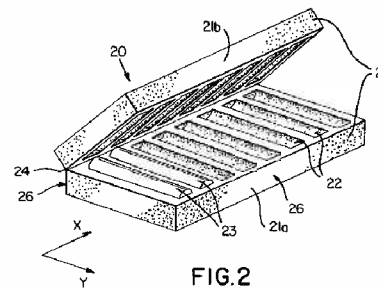
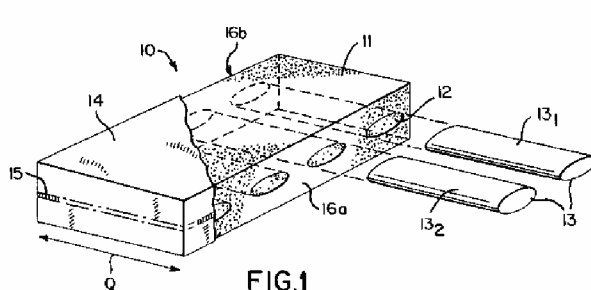
- **FR 2720245 A1 (Lambert).** Lambert, published December 1, 1995, describes a two-layer foam mattress with transverse channels (22) between the two layers that receive stiffening foam inserts (24). The stiffeners allow the stiffness of the bed to be adjusted according to user preference.



- **U.S. Patent No. 5,701,623 (May).** May, which issued on December 30, 1997, describes a mattress formed by assembling several rectangular foam pieces. May describes an embodiment in which border sections (*i.e.*, 26, 28, 30, and 32) are adhered together to form a border (which would have a cavity in the center). *See* May at 6:30–36. A core (*e.g.*, core 12) is then adhered in the center (*i.e.*, cavity) of the foam border. *Id.* at 6:37–39. The core and border have different hardnesses.



- **U.S. Patent No. 6,061,856 (Hoffmann).** Hoffmann, which issued on May 16, 2000, discloses a mattress “with at least two cylindrical cavities [12 (Fig. 1) or 22 (Fig. 2)] that extend in a transverse direction of the mattress.” Hoffmann at 1:45–48. The cavities receive “approximately cylindrical inserts” (inserts 13 (Fig. 1) or 23 (Fig. 2)) that “have different degrees of hardness.” *Id.* at 1:48–50. The cavities and inserts can also be “rectangular” rather than cylindrical. *Id.* at 4:4–6.



HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**VII. OVERVIEW OF THE ASSERTED PATENTS****A. Asserted Patents**

38. I understand that Plaintiffs currently assert three patents from one patent family. A patent family is a set of patents covering the same or similar technical content that claim priority to the same original application. The three patents were filed by the same named inventor, Richard F. Gladney, and each describe and claim virtually identical subject matter.

39. U.S. Patent No. 7,036,173 (“the ’173 patent”) was filed on October 17, 2002, and issued on May 2, 2006.

40. U.S. Patent No. 7,424,763 (“the ’763 patent”) was filed on May 1, 2006, and issued on September 16, 2008. It is a continuation of the application that issued as the ’173 patent.

41. U.S. Patent No. 8,918,935 (“the ’935 patent”) was filed on July 12, 2012, and issued on December 30, 2014. It is a continuation of an application that issued as U.S. Patent No. 8,250,689, which itself is a continuation of the application that issued as the ’763 patent.

42. Here, I understand that Plaintiffs have not identified any alleged priority date before the first filing date of October 17, 2002. If Plaintiffs seek to and are permitted to identify an earlier alleged priority date as this case moves forward, I reserve the right to consider and supplement my opinion to address such an allegation.

43. The chart below summarizes the asserted patents and claims:

Patent	Claims	Asserted Priority Date	Filing Date	Issue Date
7,036,173	5, 6, 8	Oct. 17, 2002	Oct. 17, 2002	May 2, 2006
7,424,763	1, 4, 5, 6, 7, 8, 9, 11, 12	Oct. 17, 2002	May 1, 2006	Sept. 16, 2008
8,918,935	10, 13	Oct. 17, 2002	July 12, 2012	Dec. 30, 2014

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**B. Disclosure of the Asserted Patents**

44. I have reviewed all of the Asserted Patents. Because these patents all belong to the same patent family and are related by continuations, the disclosure is essentially the same in all three. For that reason, I will focus on the '763 patent, which is representative of all Asserted Patents.

45. The '763 patent begins by stating that “a significant disadvantage” of existing mattresses made of “homogenous foam” is that “such material does not distribute localized forces well, resulting in more-than-desired deflection in regions of greater localized force or weight.” '763 patent at 1:17–20. Accordingly, the patent explains, the “typical foam mattress is not well adapted to the variations in weight and shape of a human body.” *Id.* at 1:22–24. The patent thus states there is “a need for a mattress that varies in terms of deflection to a given applied force. More particularly, it is desirable to control variations in firmness at particular regions within a mattress, in order to accommodate different body types, as well as the subjective preferences of users.” *Id.* at 1:25–30.

46. Mr. Gladney thus proposed addressing this need “within a foam mattress body” by “inserting reinforcements of various types into channels cut or otherwise formed within the foam.” *Id.* at 1:33–35. Figure 1 of the '763 patent is reproduced below:

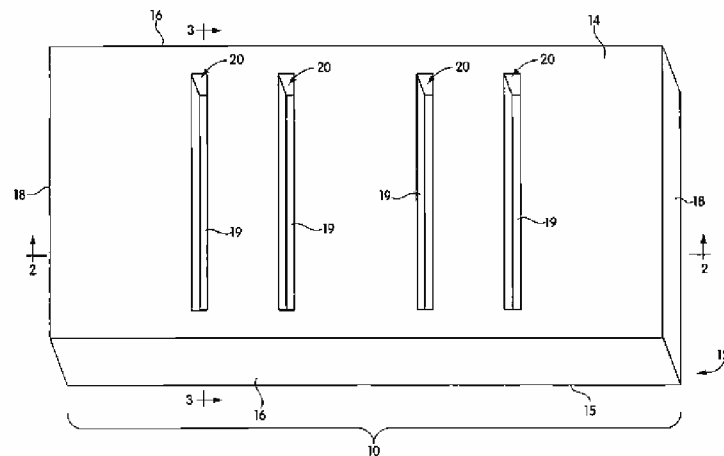


Fig. 1

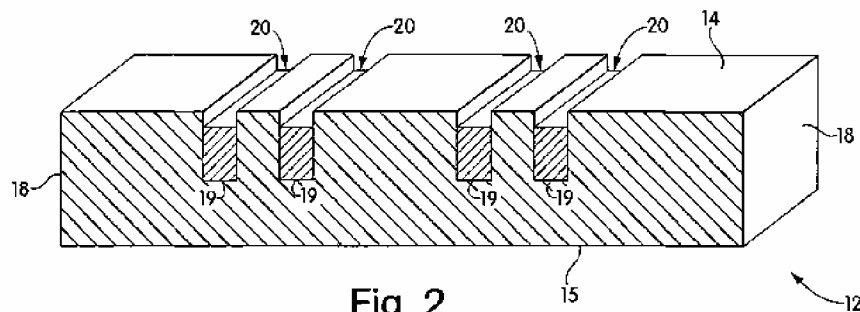
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47. The specification explains that in Figure 1, “there is illustrated a mattress 10 including a body 12 formed of foam and at least one insert 20 located within the body 12. The mattress in FIG. 1 has four such inserts 20, although more or less may be conveniently used.” *Id.* at 2:6–10. The specification further explains that “[w]hile the embodiment in FIG. 1 has a body 12 of homogenous construction, the body 12 could be formed of a combination of various types of foam with different mechanical characteristics. For example, the body 12 could be composed of multiple layers of such material, varying in respective mechanical characteristics, progressing in layer upon layer from the top surface to the bottom surface.” *Id.* at 2:26–32. The ’763 patent further explains:

[T]he channels 19 and respective inserts 20 may be placed and distributed along the axis connecting the end surfaces 18 to provide for areas of different firmness or support characteristics along the body of one or more users lying on the mattress 10. The channels 19 and respective inserts 20 could also, or instead, be placed and distributed along the axis connecting the side surfaces 16 to provide for areas of different firmness of support characteristics between the two side surfaces 16 of the mattress 10, to provide multiple comfort zones, such as for multiple users of the mattress 10.

Id. at 2:48–58. As for the design of the channel and insert, the specification provides that they “could be of any physical shape and orientation within the body 12, although the embodiment of FIG. 1 shows a linear shape parallel to the end surfaces 18.” *Id.* at 2:58–61.

48. The ’763 patent then refers to a cross-sectional view of the embodiment depicted in Figure 1, with such cross-section view depicted by Figure 2, reproduced below:



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49. According to the specification, the “channel 19 may open onto and extend from one surface, the channel surface (in the embodiment shown in FIG. 2, the top surface 14), in a generally perpendicular direction from the channel surface (in FIG. 2, the top surface 14).” *Id.* at 3:2–6. As for the composition of the inserts, the ’763 patent discloses that they “may be composed of material having mechanical characteristics different from the mechanical characteristics of the body 12. For example, a foam body 12 may have one or more non-foam inserts, such as loose or pocketed springs, a string of connected pocket springs, or any other material or construction suitable for adding support to a surface of the mattress 10.” *Id.* at 3:20–24. The specification thus teaches that the inserts can be composed of any material “suitable for adding support to a surface of the mattress.” *Id.*

50. As for the method of securing the inserts inside the channels, the specification explains that the inserts “may be permanently affixed within the channel 19 by conventional means such as by adhesive, melting due to applied heat, or frictional restraint.” *Id.* at 3:42–44. On the other hand, the specification also provides that the inserts may “be merely placed within the channel 19 without attachment to the interior thereof, held in the channel 19 either by customary cloth-type mattress cover placed over the mattress 10 during manufacture, or by a layer of additional material which might be added on top of the channel surface.” *Id.* at 3:44–50. The specification thus teaches that the inserts can be either “permanently affixed” or non-permanently affixed, by “merely plac[ing] [them] within the channel.” *Id.* at 3:42–50.

51. With respect to the method of creating the channels in the mattress body, the ’763 patent explains that there are three such methods available: (1) “cutting”; (2) “molding the channels 19 into the foam of the body 12 as the body 12 itself is molded”; or (3) “the body 12 may be formed of a number of rectangular foam sections assembled so that the assembled body 12 includes the channels 19.” *Id.* at 5:6, 37–42.

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VIII. INVALIDITY UNDER 35 U.S.C. §§ 102 & 103

52. As explained above (*see* Section VI), the idea of selectively varying the firmness of a mattress over its surface by forming channels and affixing inserts into the channels was known and practiced in the prior art well before the Asserted Patents. The Asserted Claims of the Asserted Patents are invalid as anticipated under 35 U.S.C. § 102 and obvious under 35 U.S.C. § 103, both under the Court’s construction of the claims as well as the incorrect interpretation that Plaintiffs make in order to accuse the Casper Wave mattress of infringing.

53. It is my opinion that Plaintiffs disclaimed channels in the *interior* of the mattress during the prosecution of the Asserted Patents.⁴ If the Court determines that Plaintiffs did indeed disclaim interior channels, then the references upon which I rely below under Plaintiffs’ incorrect claim interpretations—namely, Regan, Antinori, Hoffmann, Michiels, and Lambert—would not anticipate claims 1 and 4–7 of the ’763 patent, but would still render those claims invalid as obvious. Alternatively, if the Court determines that Plaintiffs did not disclaim interior channels, then those references anticipate these claims.

54. The following is a summary of the primary references that I show anticipate the Asserted Claims and/or render them obvious alone and/or in conjunction with other references discussed herein (as well as the knowledge of a person of ordinary skill in the art), either under the Court’s claim constructions or under Plaintiffs’ incorrect interpretation of the claims:

⁴ I discuss this disclaimer in Sections IV.A–C of my Declaration in Support of Defendant Casper Sleep Inc.’s Responsive Claim Construction Brief (filed Jan. 11, 2018).

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Invalidity References Under the Court's Claim Constructions and/or Under Plaintiffs' Incorrect Claim Interpretations	
Reference	Anticipates and/or Renders Obvious
Kennaway	'763 patent, cls. 1, 4, 5, 6, and 7
GB '433	'763 patent, cls. 1, 4, 5, 6, and 7
DE '214	'763 patent, cls. 1, 4, 5, 6, and 7
Peinsipp	'763 patent, cls. 1, 4, 5, 6, and 7
Tarquinio	'763 patent, cls. 8, 9, 11, and 12 '173 patent, cls. 5, 6, and 8 '935 patent, cls. 10 and 13
Scheuch	'763 patent, cls. 8, 9, 11, and 12 '173 patent, cls. 5, 6, and 8 '935 patent, cls. 10 and 13

Additional Invalidity References Under Plaintiffs' Incorrect Claim Interpretations	
Reference	Anticipates and/or Renders Obvious
Regan	<i>All claims</i>
Antinori	<i>All claims</i>
Hoffmann	<i>All claims</i>
Michiels	'763 patent, cls. 1, 4, 5, 6, and 7
Lambert	'763 patent, cls. 1, 4, 5, 6, and 7
Kennaway	'763 patent, cls. 8, 9, 11, and 12 '173 patent, cls. 5, 6, and 8 '935 patent, cls. 10 and 13
GB '433	'763 patent, cls. 8, 9, 11, and 12 '173 patent, cls. 5, 6, and 8 '935 patent, cls. 10 and 13

A. Identification of Prior Art References

55. The following prior art references anticipate or, both individually and in the combinations described below, render obvious all of the Asserted Claims.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**1. International Publication No. WO 81/02384 (Kennaway)**

56. International Publication No. WO 81/02384 to Alexander Kennaway et al. (“Kennaway”) is titled “Mattress.” Kennaway was filed on February 19, 1981, and published on September 3, 1981. Kennaway is prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). Kennaway describes a mattress with “a foam interior comprising a number of interchangeable foam blocks of different hardnesses.” Kennaway at Abstract. Kennaway describes the embodiment shown in Figure 4 (below) as follows:

[A] mattress in accordance with the invention may comprise a main body of foam having several voids which are filled by foam insert sections of different hardnesses. . . . The mattress interior shown in Fig. 4 has a main foam section 8 with a series of parallel transversely extending channel voids filled by corresponding shaped removable elongate insert sections 9 of a different hardness or hardnesses. In Figure 4, three of the insert sections are shown partly removed.

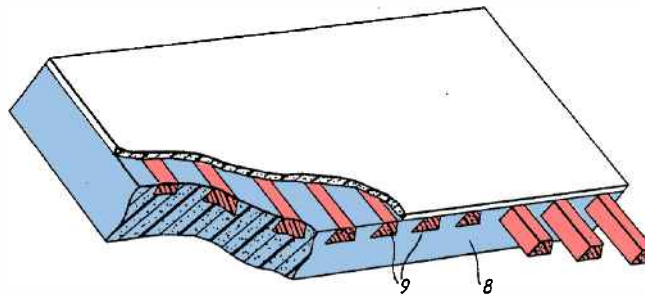
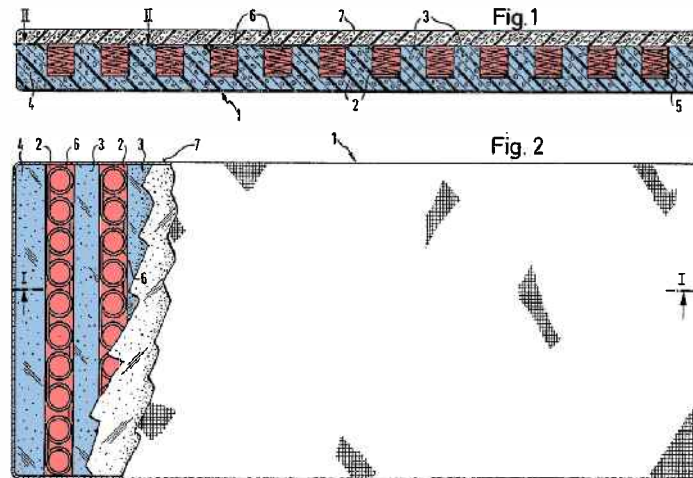


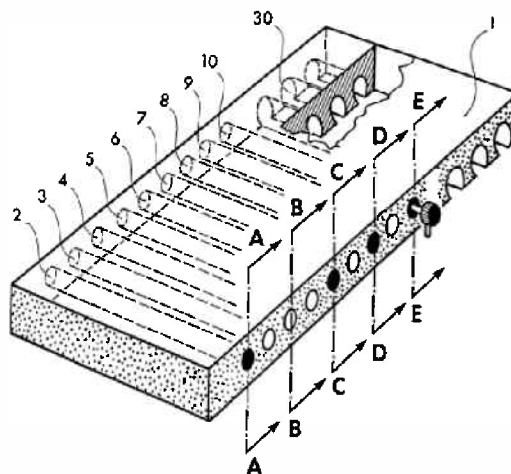
Fig.4.

2. Great Britain Patent Specification No. 1 483 433 (GB '433)

57. Great Britain Patent Specification No. 1 483 433 (“GB '433”) is titled “Improvements in or Relating to Mattresses and the Like.” GB '433 was filed on September 5, 1974, and published on August 17, 1977. GB '433 is prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). GB '433 describes “mattresses of which a major part is formed from a foamed polymeric material.” GB '433 at 1:10–14. As seen below, the mattress has a “body of foamed polymeric material [with] a plurality of cut-out parallel channels extending . . . over the entire width[] of the body.” *Id.* at 1:96–2:5. “[T]here are continuous spring elements inserted into the channels in the foam” *Id.* at 2:85–88.

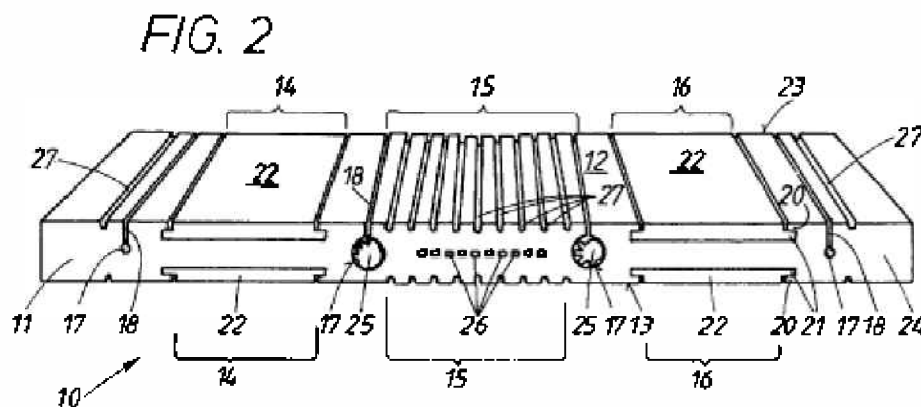
HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**3. Unexamined German Patent Application No. 3937214 A1 (DE '214)**

58. Unexamined German Patent Application No. 3937214 (“DE '214”) is titled “Orthosis for supporting the reclining human body.” DE '214 was filed on November 8, 1989, and was published on May 16, 1991. DE '214 is prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). DE '214 describes a mattress “which contains a channel extending over the surface area thereof with an insert piece inserted therein.” DE '214 at Abstract. The mattress is described as having “channels arranged side by side, into which the insert pieces having different elasticities are inserted in such a way that the mattress part forms a pattern with locally different resistance values for the person reclining thereon.” *Id.*

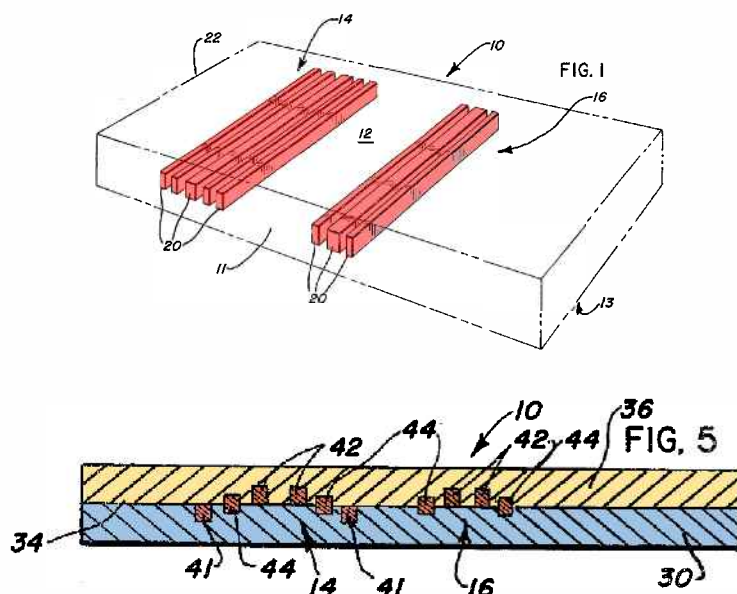
**Fig.1**

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**4. European Patent Application No. 0782830 (Peinsipp)**

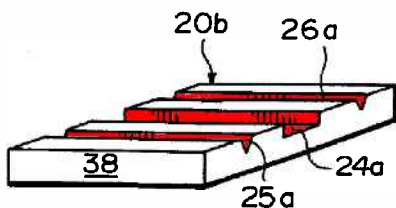
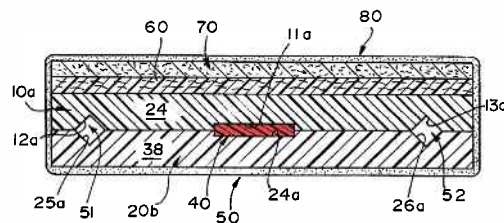
59. European Patent Application No. 0782830 (“Peinsipp”) is titled “Mattress.” Peinsipp was filed on January 4, 1997, and published on July 9, 1997. Peinsipp is prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). Peinsipp describes a foam mattress made with multiple types of foam that has surface modifications to impact support in different areas. The mattress in Peinsipp includes apertures or openings (17) with “supporting members”—*i.e.*, inserts—in the apertures to help support the user.

**5. U.S. Patent No. 4,161,045 (Regan)**

60. U.S. Patent No. 4,161,045 to John Regan (“Regan”) is titled “Mattress.” Regan was filed on December 19, 1977, and issued on July 17, 1979. Regan is thus prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). Regan describes “[a] mattress of improved support having planar top and bottom surfaces . . . with at least two sets of transversely extending ribs” that are “less compressible than the material of the mattress.” Regan at Abstract. These ribs are “positioned within the mattress 10 to correspond to the areas of greatest weight of a user.” *Id.* at 2:35–37. In one embodiment, Regan discloses a multi-layer mattress in which each layer has recess on the surface and ribs affixed in the recesses. *See id.* at 3:5–38.

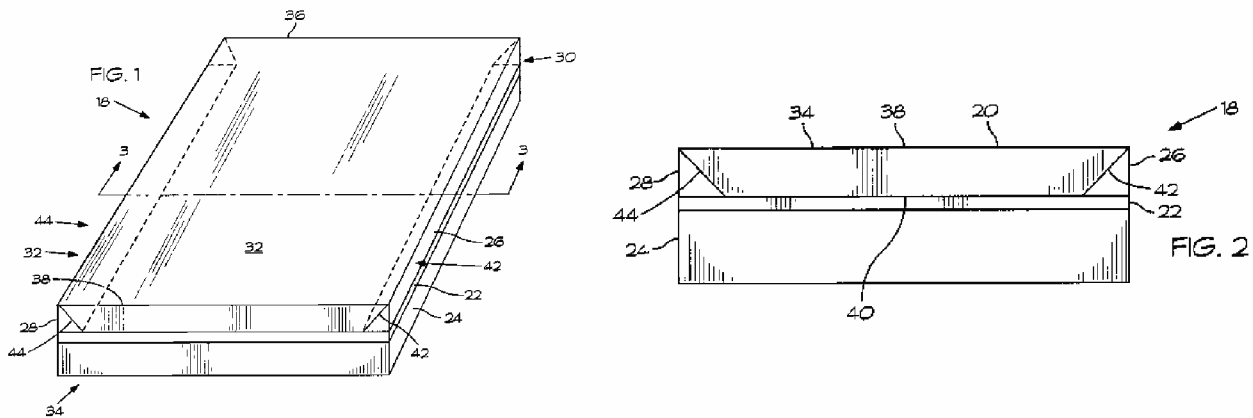
HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**6. U.S. Patent No. 6,223,371 (Antinori)**

61. U.S. Patent No. 6,223,371 to Steven Antinori et al. (“Antinori”) is titled “Mattress and Method of Manufacture.” Antinori was filed on April 15, 1999, and issued on May 1, 2001. Antinori is thus prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). Antinori describes the manufacture of a mattress with multiple layers. Antinori at 3:23–25. Between two layers “an insert 40 . . . having a relatively high Indentation Load Deflection (ILD) value, such as ILD 60, is inserted in one of the central recesses.” *Id.* at 4:18–22. This “firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress.” *Id.* at 4:28–31. Antinori emphasizes—well before the Asserted Patents were ever filed—that “through the utilization of one or more transverse recesses . . . postural support can be firmed in a selective fashion through the insert.” *Id.* at 5:1–6.

**Excerpt of Fig. 3 of Antinori****Excerpt of Fig. 4 of Antinori**

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**7. U.S. Patent No. 6,601,253 (Tarquinio)**

62. U.S. Patent No. 6,601,253 to Peter Tarquinio (“Tarquinio”) is titled “Multilayer Foam Mattress With Side Supports.” Tarquinio was filed July 8, 2002, and issued on August 5, 2003. Tarquinio is thus prior art to the Asserted Patents under at least 35 U.S.C. § 102(e), as it was filed before the earliest application for any of the Asserted Patents was filed on October 17, 2002, and I understand that Plaintiffs did not identify any alleged conception date for any of the Asserted Claims prior to October 17, 2002 (and thus nothing prior to Tarquinio’s filing date of July 8, 2002). Tarquinio describes “a mattress comprising of a plurality of foam layers and a pair of support members in one of the foam layers.” Tarquinio at 1:4–7. During assembly of the Tarquinio mattress, a top layer (20), intermediate layer (22), and bottom layer (24) are assembled, which forms “elongate wedge-shaped notches 42 and 44”—*i.e.*, channels along the side of the mattress are formed by assembly of the layers. *Id.* at 2:34–48. “[S]upport members 26 and 28,” which “are firmer than the top layer,” are inserted into the channels to provide increased support on the sides of the mattress. *Id.* at 3:21–31.

**8. European Patent Publication No. 1031302A2 (Scheuch)**

63. European Patent Publication No. 1031302A2 to Mario Scheuch (“Scheuch”) is titled “Mattress.” Scheuch was filed on February 22, 2000, and published on August 30, 2000. Scheuch is prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). Scheuch describes

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“[a] mattress having a multi-part core of elastic material, in particular a foam core, . . . having one or more recesses in the horizontal central region of the longitudinal section as well as having inserts or insets provided transverse to the lying direction in the recess or the recesses for locally changing the elastic properties of the mattress.” Scheuch ¶ [0001]. This allows for “different levels of hardness” across the mattress, including “adaptation of the hardness or elasticity in the head, shoulder, back and pelvic regions.” *Id.* ¶ [0006].

Fig. 1

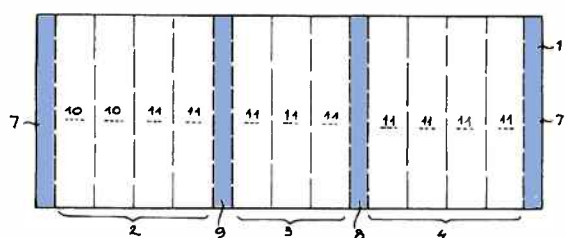
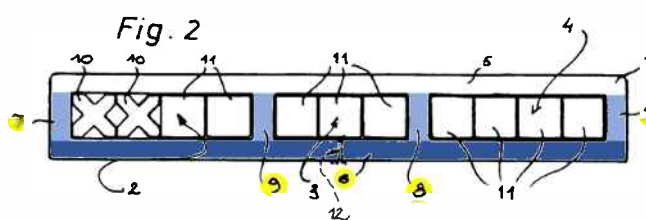


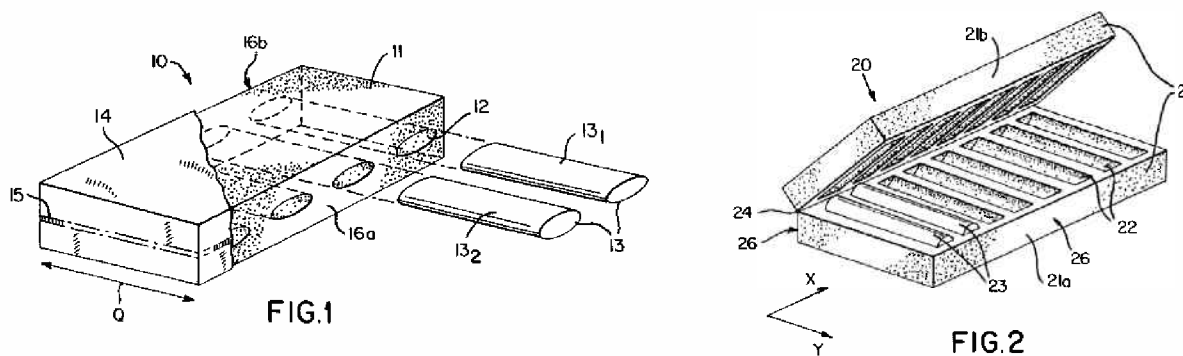
Fig. 2



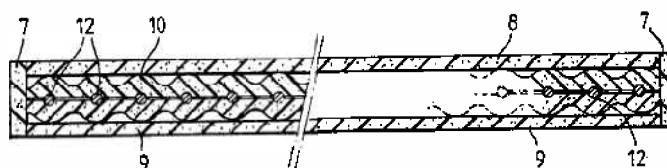
64. The mattress in Scheuch can be formed by assembling rectangular foam pieces (in color above). *Id.* ¶ [0025]. Scheuch explains, for example, that “foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” *Id.* The different foam pieces that are used to assemble the mattress and form the channels are colored and highlighted in the figure above.

9. U.S. Patent No. 6,061,856 (Hoffmann)

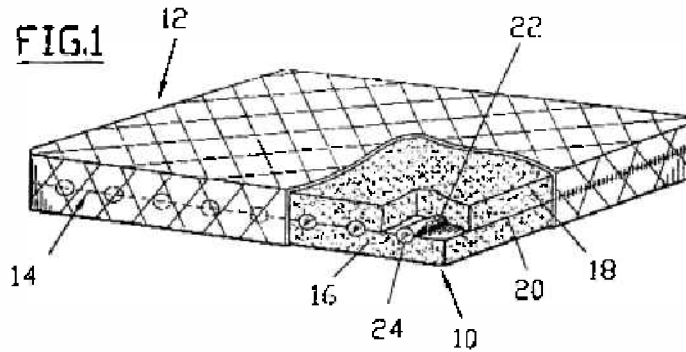
65. U.S. Patent No. 6,061,856 to Hubert Hoffmann (“Hoffmann”) is titled “Mattress.” Hoffmann was filed on November 6, 1998, and issued on May 16, 2000. Hoffmann is prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). Hoffmann describes “a base member that is provided with at least two approximately cylindrical cavities that extend in a transverse direction of the mattress or mattress core,” with “inserts,” having “different degrees of hardness,” that are “adapted to be placed into the cavities.” Hoffmann at Abstract. This allows adapting the mattress to “individual load requirements.” *Id.* at 1:15–20.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**10. U.S. Patent No. 4,407,031 (Michiels)**

66. U.S. Patent No. 4,407,031 to August Michiels (“Michiels”) is titled “Elastomer Mattress with Stiffener Elements.” Michiels was filed on January 7, 1981, and issued on October 4, 1983. Michiels is prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). Michiels describes “[a]n improved mattress . . . having upper and lower elastomer sheets [*i.e.*, layers] with an undulating structure of elastomer elements housed between the sheets and containing stiffener elements.” Michiels at Abstract. The stiffener elements are designed to help the mattress not “permanently deform with continuous use.” *Id.* at 1:18–21.

*Fig. 2.***11. French Patent Publication No. 2 720 245 (Lambert)**

67. French Patent Publication No. 2 720 245 to Jacques Charles Lambert (“Lambert”) is titled “Foam Rubber Mattress with Adjustable Firmness.” Lambert was filed on May 26, 1994, and published on December 1, 1995. Lambert is prior art to the Asserted Patents under at least 35 U.S.C. § 102(b). Lambert describes a “foam rubber mattress” with “sockets” formed by cutting that receive “rigidifying elements thus enabling the regulation of the firmness according to the nature, the number and profile of these rigidifying elements.” Lambert at Abstract.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**B. Rebuttal to Plaintiffs’ Validity Positions from the Preliminary Injunction Proceedings**

68. I have reviewed Plaintiffs’ Reply in Further Support of Plaintiffs’ Motion for Preliminary Injunction. *See* D.I. 51. In it, Plaintiffs respond to invalidity arguments Casper made in its Opposition to Plaintiffs’ Motion for a Preliminary Injunction, in support of which I submitted a declaration. *See* D.I. 43; D.I. 46 (incorporated herein by reference). In doing so, Plaintiffs make incorrect assertions about the scope of the prior art and the meaning of the claims. I respond to many of these incorrect assertions below, as I discuss individual references.

69. For example, Plaintiffs repeatedly made an incorrect assertion in response to many of the references Casper identified in its Opposition to Plaintiffs’ Motion for a Preliminary Injunction. In particular, Plaintiffs alleged that “removable” inserts in various prior art references are not “affixed” within a channel. *See* D.I. 51 at 17, 19–22. This is an improper interpretation of the terms “affix” or “affixed.” In short, “affixing” does not require permanence, as made clear by the Asserted Patents themselves, the plain and ordinary definition of that word, and inventor Gladney’s own testimony.

70. The Asserted Patents state that “[t]he insert 20 *may be permanently* affixed within the channel 19 by conventional means such as by adhesive, melting due to applied heat, or

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frictional restraint.”⁵ ’763 patent at 3:42–44. Describing these methods of affixing as “permanent[]” necessarily means that affixing, by itself, need not be permanent. Indeed, in related U.S. Patent No. 9,549,620, Plaintiffs included a claim requiring that “the insert is permanently affixed to a surface defining the at least one channel,” demonstrating that they understood they needed to say “permanently” in order to require permanence, and that claims reciting “affixing” without the word “permanently” do not require permanence. ’620 patent, cl. 6. Further, by describing that such “permanent” affixing methods “may be” used, the Asserted Patents clearly contemplate that other, non-permanent methods of affixing the inserts are encompassed by the claims.

71. The ’763 patent provides one such example of affixing that is not permanent:

Alternately, the insert 20 may be merely placed within the channel 19 without attachment to the interior thereof, held in the channel 19 either by a customary cloth-type mattress cover placed over the mattress 10 during manufacture, or by a layer of additional material which might be added on top of the channel surface and cover the entire channel surface or that portion of the channel surface surrounding and including the channel 19.

Id. at 3:44–52. Inventor Richard Gladney agrees that “affixing” by itself does not require permanence. Gladney Dep. at 83:7–84:11. Thus, even removable inserts can be “affixed” in a mattress, such as when they are held in place by a cover or mattress topper.

72. Furthermore, even if affixing required permanence, it would be obvious to modify any reference discussed herein to hold the inserts in place permanently. Indeed, the USPTO specifically found that permanent affixing using adhesives or heat “would have been [an] obvious matter of design choice.” ’935 FH, 10/17/2013 Office Action at 2; *see also* ’935 FH, 4/9/2014 Office Action at 2; ’620 FH, 9/11/2015 Office Action at 6.

⁵ I note that a person of ordinary skill in the art understands that friction may not necessarily be “permanent.”

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**C. The Asserted Mattress Claims Are Invalid as Anticipated and Obvious**

73. Plaintiffs assert five claims directed to a “mattress”: claims 1, 4, 5, 6, and 7 of the ’763 patent. Each of these claims is invalid as anticipated and obvious, under both the Court’s construction of the claims and under the strained interpretation of the claims Plaintiffs make to accuse the Casper Wave of infringing.

1. Invalidity of the Mattress Claims Under the Court’s Constructions and/or Under Plaintiffs’ Incorrect Claim Interpretations

74. The following references anticipate and/or render obvious the asserted mattress claims under the Court’s construction of the claims and/or under Plaintiffs’ incorrect interpretations.⁶

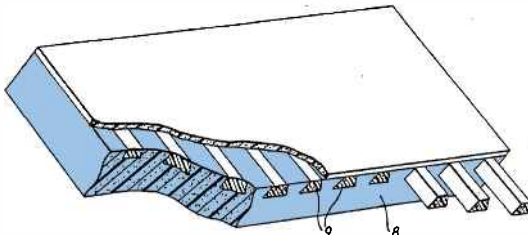
a. Kennaway Anticipates and/or Renders Obvious the Asserted Mattress Claims Under the Court’s Constructions and/or Under Plaintiffs’ Incorrect Claim Interpretations

75. Kennaway anticipates and/or renders obvious claims 1, 4, 5, 6, and 7 of the ’763 patent under the Court’s claim constructions and/or under Plaintiffs’ incorrect claim interpretations, as shown below:

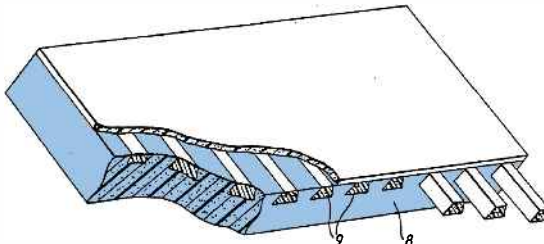
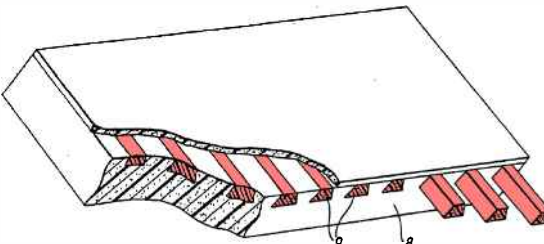
’763 Patent Claim Chart: Kennaway	
[1] A mattress comprising:	Kennaway describes a mattress of adjustable resilience. Kennaway at 2:19–21, 6:19–22.
[1.1a] a body made of foam having a mechanical characteristic,	<p>The mattress comprises “a main body of foam,” <i>i.e.</i>, “main foam section 8.”</p> <p>The court construed the term body as “a physical structure.” Kennaway discloses a body under this construction as described above.</p> <p>Kennaway at 6:19–28; Abstract (“A mattress intended primarily for orthopaedic use has a foam interior”); 1:3–4 (“This invention relates to a foam mattress intended particularly for orthopaedic use.”).</p>

⁶ All citations to figures in the charts below incorporate all text accompanying the figure.

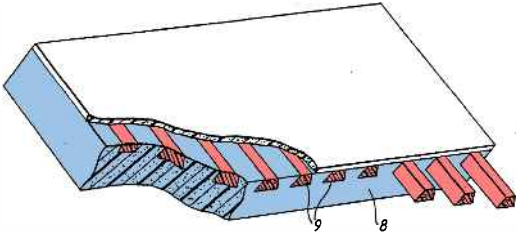
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'763 Patent Claim Chart: Kennaway	
	 <p>Fig.4.</p>
[1.1b] the body having a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces,	As a rectangular prism, as seen in Fig. 4, main foam section 8 has a top surface, bottom surface, a first and second side surfaces and a first and second end surfaces. Kennaway at Fig. 4.
[1.1c] at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom; and	<p>The top surface of main foam section 8 has “a series of parallel transversely extending channel voids.” Kennaway at 6:24–28; <i>see also id.</i> at 7:1–4.</p> <p>The court construed “channel” as “a long, narrow groove.” The “parallel transversely extending channel voids” are long, narrow grooves.</p> <p>For example, Figure 4 of Kennaway shows examples of channel voids extending into the body perpendicularly therefrom. I understand that Plaintiffs have taken the position that the channels in Kennaway do not extend “perpendicularly” from the surface of the body because, in Plaintiffs’ words, “the voids extend into the body at a significant angle so as to accommodate removable inserts that are generally trapezoidal.” D.I. 51 at 18. In my opinion, as I have explained in my prior declaration and deposition errata, Plaintiffs are wrong. Although the walls of such a channel may not be perpendicular to the surface of the body, the channel itself does extend perpendicularly into the body, which is what the claims require. Thus, the trapezoidal shaped channels shown in Figure 4 of Kennaway meet this claim limitation, and Kennaway anticipates.</p> <p>Further, the trapezoidal shaped channels shown in Figure 4 is but one potential shape for the channels. A person of ordinary skill in the art would understand Kennaway to disclose any shape of channel, such as rectangular or circular channels.</p>

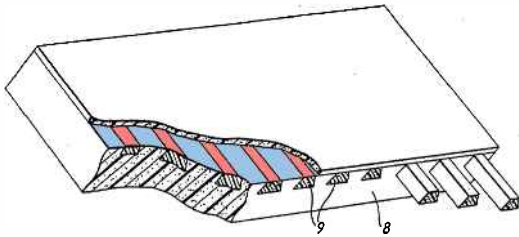
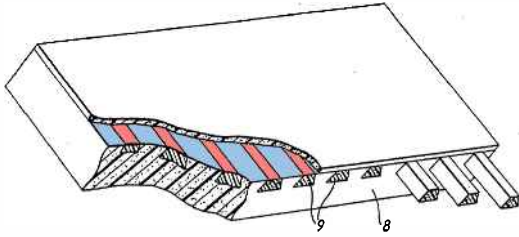
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'763 Patent Claim Chart: Kennaway	
	<p>Indeed, even Figure 4 itself discloses and illustrates a channel and corresponding insert with a <i>rectangular</i> cross-section, on the left side of the figure. Thus, even under Plaintiffs' interpretation of the claims—requiring the channel walls to extend perpendicularly from the surface—Kennaway discloses this limitation. And, in any event, it would be obvious to a person of ordinary skill in the art to select a channel shape with walls perpendicular to the surface (which is shown in several references discussed herein).</p>  <p>Fig.4.</p>
[1.2a] a plurality of inserts,	<p>The mattress includes “removable elongate insert sections 9.” Kennaway at 6:24–28. The mattress contains “a plurality of foam insert sections of a different hardness from the main section inserted in voids formed in the main section.” <i>Id.</i> at 9:9–11.</p>  <p>Fig.4.</p>
[1.2b] each insert having a mechanical characteristic different from the mechanical characteristic of the foam and	<p>The insert sections 9 have “different hardness or hardnesses.” Kennaway at 6:24–28, 9:9–11.</p>
[1.2c] affixed within one of the plurality of channels,	<p>The mattress “has a main foam section 8 with a series of parallel transversely extending channel voids filled by corresponding shaped removable elongate insert sections 9.” Kennaway at 6:24–28. The inserts are “inserted in voids formed in the main section,” <i>id.</i> at 9:9–11—<i>i.e.</i>, they are “fitted in voids in the main section.” <i>Id.</i> at 3:21.</p>

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'763 Patent Claim Chart: Kennaway	
	<p>The inserts are affixed within the channels. The mattress has an “upper soft foam layer” covering the channels. Kennaway at 5:2–3. Kennaway also discloses a “cover” that is “removable to allow foam sections to be replaced thereby to alter the hardness characteristics of the mattress.” <i>Id.</i> at 2:26–28. The “upper soft foam layer” and cover affix at least one of the inserts within one of the channels. The cover, for example, “fits closely around the internal foam body,” thus affixing the inserts within the channel. Kennaway at 2:26–28, 3:7–9, 5:7–25. The inserts are also affixed due to the friction with the channel walls. Kennaway at 5:7–12; <i>see also id.</i> at 8:2–7, 9:5–11.</p>  <p style="text-align: center;">Fig.4.</p>
[1.2d] each insert reinforcing the body.	<p>The insert sections 9 have “different hardness or hardnesses” to reinforce the body. Kennaway explains that the “channel voids” (<i>i.e.</i>, channels) are “filled by corresponding shaped removable elongated inserts sections 9 of a different hardness or hardnesses.” Kennaway at 6:26–29. Inserts that “fill[]” a channel and are “corresponding[ly] shaped” to the channel will help reinforce the body. Figures 2a, 2b, 2c & 3 show some possible arrangements of inserts of varying hardnesses to reinforce the body. A person of ordinary skill in the art would understand that each of the inserts would reinforce the body.</p>
[4] The mattress of claim 1 further comprising	<p><i>See Claim 1, above.</i></p>
[4.1a] a material that covers at least one of the channels,	<p>The mattress has an “upper soft foam layer” covering the channels. Kennaway at 5:2–3. Kennaway also discloses a “cover” that is “removable to allow foam sections to be replaced thereby to alter the hardness characteristics of the mattress.” <i>Id.</i> at 2:26–28, 5:7–25.</p>
[4.1b] the material securing at least one of the inserts within one of the channels.	<p>The “upper soft foam layer” and cover secure at least one of the inserts within one of the channels. The cover, for example, “fits closely around the internal foam body,” thus securing the inserts in the channel. Kennaway at 2:26–28, 3:7–9; <i>see also id.</i> at 5:7–25, Fig. 1 (and accompanying text).</p>

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'763 Patent Claim Chart: Kennaway	
[5] The mattress of claim 4 further comprising	<i>See Claim 1, above.</i>
[5.1] a mattress cover surrounding the mattress.	The mattress contains “a flexible cover surrounding the body.” Kennaway at 2:24.
[6] The mattress of claim 1, wherein	<i>See Claim 1, above.</i>
[6.1] at least one of the insert is substantially flush with the at least one of the top and bottom surfaces.	<p>The tops of the insert sections 9 are substantially flush with the top surface of the main foam section 8, as depicted in Figure 4.</p>  <p style="text-align: center;">Fig.4.</p>
[7] The mattress of claim 1, wherein	<i>See Claim 1, above.</i>
[7.1] each channel extends to an opening in at least one of the surfaces adjacent to the channel surface.	<p>Main foam section 8 has “a series of parallel transversely extending channel voids,” which extend to an opening on the side of the mattress, as depicted in Figure 4. Kennaway at 6:24–28.</p>  <p style="text-align: center;">Fig.4.</p>

(i) Rebuttal to Plaintiffs’ preliminary injunction arguments

76. In Plaintiffs’ reply brief in support of their Motion for a Preliminary Injunction, Plaintiffs argued that Kennaway did not disclose three limitations: (1) inserts “affixed” within the channels; (2) inserts that “each reinforce the body”; and (3) channels that “extend[] into the body perpendicularly [from a top or bottom surface].” All three assertions are incorrect.

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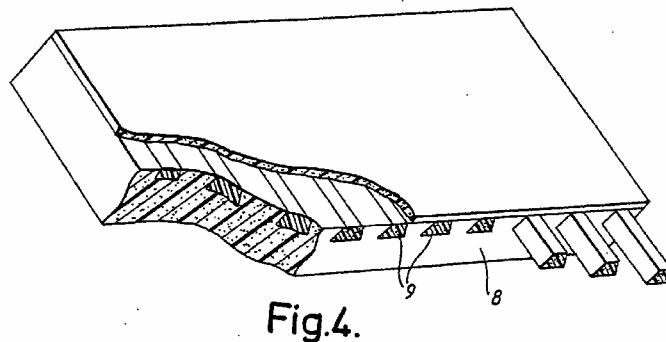
77. First, as explained above (*see* Section VIII.B), the term “affixed” does not require permanence. Thus, the fact that the inserts are “removable” is irrelevant. The inserts depicted in Figure 4 remain in place due to the friction with the channel walls, the “upper soft foam layer” covering the channels, and the cover that fits closely around the mattress. Kennaway at 5:2–3, 7–12; *see also id.* at 3:7–9, 8:2–7, 9:5–11. Accordingly, the inserts are “affixed” within the channels.

78. Second, Kennaway discloses adjusting the resilience of the mattress “according to the particular requirements of each individual patient.” Kennaway at 2:10–12. Further, Kennaway specifically teaches that there are many different “typical arrangements” of the “different hardnesses” of the inserts employed. Kennaway at 6:9–18. A person of ordinary skill in the art would understand that one such arrangement of inserts would be one in which all inserts are firmer than the surrounding foam, each reinforcing the body. Indeed, this arrangement is explicitly taught by Figures 2(a), 2(b), and 2(c), which depict using inserts made of both “firmer” and “firmest” material relative to the surrounding mattress body. Kennaway at Figs. 2(a), 2(b), 2(c). Although some patients would desire to “reduce the hardness of foam,” others would need a firmer mattress with firm and reinforcing inserts, as Kennaway teaches.

79. Finally, Kennaway discloses channel voids extending into the body perpendicularly therefrom. As explained above, although the walls of trapezoidal channel may not be perpendicular to the surface of the body, the channel itself does extend perpendicularly into the body, which is what the claims require. Furthermore, the trapezoidal channel shape shown in Figure 4 of Kennaway is only one of many channel shapes disclosed in Kennaway. Indeed, even Figure 4 itself discloses and illustrates a channel and corresponding insert with a *rectangular* cross-section, on the left side of the figure. Kennaway also discloses an embodiment with “cylindrical insert sections,” among others. Kennaway at 7. It is thus clear to a person of ordinary skill in the art reading Kennaway that it discloses many different shapes of channel and

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insert, including rectangular. The only condition placed on the channel shape is that the inserts have a shape corresponding to the shape of the channels: “The mattress interior shown in Fig. 4 has a main foam section 8 with a series of parallel transversely extending channel voids filled by corresponding shaped removable elongate insert sections 9 of a different hardness or hardnesses.” Kennaway at 6:24–28. Thus, the parallel transversely extending channel voids could have a rectangular cross section, just as shown in Figure 4 on the left side, and would meet this limitation as Plaintiffs interpret it.

**(ii) Obviousness based on Kennaway**

80. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Kennaway, the asserted mattress claims would have been obvious to a person of ordinary skill in the art in light of Kennaway alone, as well as obvious over Kennaway in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Kennaway with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

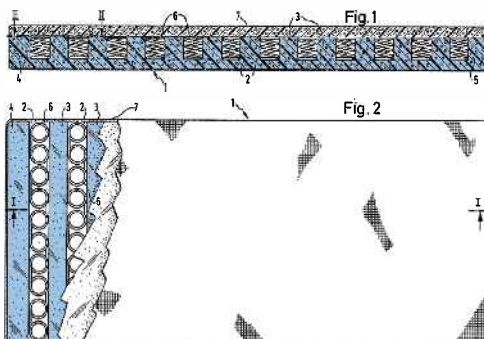
81. For example, to the extent Kennaway is assumed not to expressly or inherently disclose channels that “extend[] into the body perpendicularly [from a top or bottom surface],” it would have been obvious to modify Kennaway to have any channel shape, including the shape of the channels disclosed in references such as Regan and Antinori, to achieve the asserted claims.

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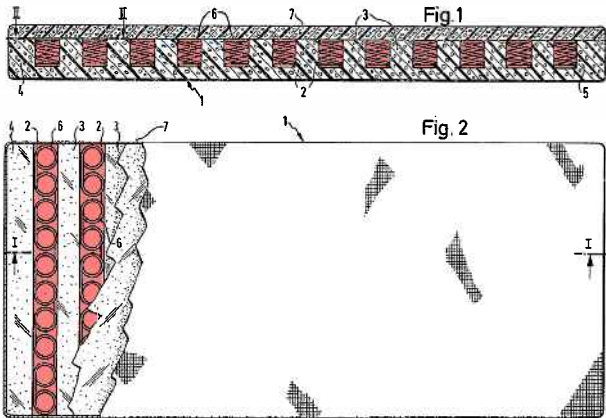
It would also have been obvious to configure the mattress in Kennaway so that each insert reinforces the body of the mattress, as also disclosed in references such as Regan and Antinori. Indeed, a person of ordinary skill in the art would understand that *any* inserts, of *any* hardness, would reinforce a channel-cut body.

b. GB '433 Anticipates and/or Renders Obvious the Asserted Mattress Claims Under the Court's Constructions and/or Under Plaintiffs' Incorrect Claim Interpretations

82. GB '433 anticipates and/or renders obvious claims 1, 4, 5, 6, and 7 of the '763 patent under the Court's claim constructions and/or under Plaintiffs' incorrect claim interpretations, as shown below:

'763 Patent Claim Chart: GB '433	
[1] A mattress comprising:	GB '433 describes "a mattress." GB '433 at 1:63–79.
[1.1a] a body made of foam having a mechanical characteristic,	<p>The mattress has a "body of foamed polymeric material," labeled as "underbody 1" in the figures. GB '433 at 1:96–2:5.</p> <p>The court construed the term "body" as "a physical structure." GB '433 discloses a body under this construction as described above.</p>  <p><i>See also:</i></p> <p>"The drawings show a mattress underbody 1 which may be manufactured from a so-called hot foam, such as a polyether, or from a cold foam, such as a polyurethane. The mattress underbody 1 has a number of channels 2 extending transversely of the length of the mattress and arranged parallel to each other." GB '433 at 3:24–31.</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: GB '433**

<p>[1.1b] the body having a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces,</p>	<p>As a rectangular prism, as seen in the figures, the underbody 1 has a top surface, bottom surface, a first and second side surfaces and a first and second end surfaces. GB '433 at Figs. 1 & 2; <i>see also id.</i> at 1:25–28 (“[I]t is known to provide a mattress having top, bottom, and at least two opposing sides formed from a foam material”).</p>
<p>[1.1c] at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom; and</p>	<p>The top surface of underbody 1 “has a number of channels 2 extending transversely of the length of the mattress and arranged parallel to each other.” GB '433 at 3:24–31.</p> <p>The court construed “channel” as “a long, narrow groove.” The transversely extending channels in GB '433 are long, narrow grooves.</p>  <p>The channels extend perpendicularly into the underbody from its surface: “a plurality of substantially parallel channels . . . having a depth taking up a major portion of the thickness of said body.” GB '433 at 1:67–71.</p> <p><i>See also:</i></p> <p>“The body of foamed polymeric material has a plurality of cut-out parallel channels extending over the entire length, or preferably over the entire width, of the body and separated from each other by webs of the polymeric material.” GB '433 at 1:96–2:5.</p>
<p>[1.2a] a plurality of inserts,</p>	<p>The mattress includes several “continuous wire spring elements 6,” GB '433 at 3:69–74, “which lie adjacent on another within each said channel.” GB '433 at 1:75–76.</p>

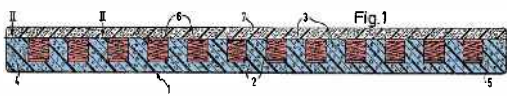
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'763 Patent Claim Chart: GB '433	
	<p><i>See also:</i></p> <p>“[T]here are continuous spring elements inserted into the channels in the foam which spring elements are held on two sides by the fixed foam webs.” GB '433 at 2:68–88; <i>id.</i> at 2:126–3:10, 3:69–94.</p>
[1.2b] each insert having a mechanical characteristic different from the mechanical characteristic of the foam and	<p>GB '433 teaches that the “continuous wire spring elements 6”—<i>i.e.</i>, inserts—together with the “fixed foam webs” are strategically placed throughout the mattress body to “act as an additional reinforcement” to the mattress body and provide increased support. GB '433 at 2:85–95; 3:69–74. Thus the inserts have mechanical characteristics that are different from the mechanical characteristics of the foam.</p>
[1.2c] affixed within one of the plurality of channels,	<p>“[I]nto the channels of the foam mattress underbody 1 thus produced there are inserted continuous wire spring elements 6” GB '433 at 3:69–74. The inserts are “held on two sides by the fixed foam webs.” GB '433 at 2:85–88.</p> <div> </div> <p><i>See also:</i></p> <p>“According to the present invention there is provided a mattress or the like comprising a body of foamed polymeric material provided in one face thereof with a plurality of substantially parallel channels separated by webs therebetween, each said channel running completely across the width or the length of said body, being open at each end, and having a depth taking up a major portion of the thickness of said body . . . and a plurality of springs which lie adjacent one another within each said channel” GB '433 at 1:63–79.</p> <p>“[C]ontinuous wire spring elements” (<i>i.e.</i>, inserts) are “put into the channels” and secured from above by “the padding layer” which is “glue[d] on.” GB '433 at 2:114–116.</p>

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'763 Patent Claim Chart: GB '433	
[1.2d] each insert reinforcing the body.	<p>The spring elements, because they are metal and are flush with the channel base, padding layer, and side walls (webs), reinforce the body. GB '433 at 2:68–74; 1:23–33, 1:63–79; 2:80–95, 2:118–125.</p> <p>The combination of the “spring elements” and the “channels in the foam,” in which the spring elements “are held on two sides by the fixed foam webs,” “act[s] as an additional reinforcement due to the different elastic properties of the springs and the foam web material.” GB '433 at 2:92–95.</p>
[4] The mattress of claim 1 further comprising	<i>See</i> Claim 1, above.
[4.1a] a material that covers at least one of the channels,	<p>Both a “padding layer 7” and “stitched cellulose cloth” cover at least one of the channels. GB '433 at 3:77–83, 3:95–100.</p> <p><i>See also:</i></p> <p>“On one side the individual springs rest on the base of the channel and on the other side against a padding layer 7 of foam secured to the upper side of the underbody without exerting substantial force on either the base or the padding layer.” GB '433 at 3:77–83.</p> <p>“To cover the openings of the channels along the longitudinal sides of the mattress, there may be provided a layer of stitched cellulose cloth with an intermediate layer of foam and a covering material disposed over that layer.” GB '433 at 3:95–100.</p>
[4.1b] the material securing at least one of the inserts within one of the channels.	<p>These materials secure the spring elements within the channels. GB '433 at 3:77–83, 3:95–100.</p> <p><i>See also:</i></p> <p>“[C]ontinuous wire spring elements” (<i>i.e.</i>, inserts) are “put into the channels” and secured from above by “the padding layer” which is “glue[d] on.” GB '433 at 2:114–116. “To cover the openings of the channels along the longitudinal sides of the mattress, there may be provided a layer of stitched cellulose cloth with an intermediate layer of foam and a covering material disposed over that layer.” GB '433 at 3:95–100.</p>

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'763 Patent Claim Chart: GB '433	
[5] The mattress of claim 4 further comprising	<i>See Claim 1, above.</i>
[5.1] a mattress cover surrounding the mattress.	The mattress contains a “covering material” which “may be a base cover of plain material for the entire mattress which is then covered in the usual manner in a further attractive covering material.” GB '433 at 3:95–105.
[6] The mattress of claim 1, wherein	<i>See Claim 1, above.</i>
[6.1] at least one of the insert is substantially flush with the at least one of the top and bottom surfaces.	<p>The tops of the spring elements 6 are substantially flush with the top surface of underbody 1. GB '433 at Fig. 1.</p> 
[7] The mattress of claim 1, wherein	<i>See Claim 1, above.</i>
[7.1] each channel extends to an opening in at least one of the surfaces adjacent to the channel surface.	The channels run “preferably in a direction transverse to the length of the mattress and which are open at each end, i.e. on both longitudinal sides of the mattress.” GB '433 at 2:43–47.

(i) Rebuttal to Plaintiffs’ preliminary injunction arguments

83. In Plaintiffs’ reply brief in support of their Motion for a Preliminary Injunction, Plaintiffs argued that GB '433 did not disclose two limitations: (1) inserts “affixed” within the channels; and (2) inserts that “each reinfor[e] the body.” Both assertions are incorrect.

84. First, the springs in GB '433 are “affixed” within the channels in several ways. For example, the springs are “held on two sides by the fixed foam webs.” GB '433 at 2:85–88. The springs are further secured in place from above by “the padding layer” which is “glue[d] on.” *Id.* at 2:114–116; *see also id.* at 3:95–100 (“To cover the openings of the channels along the longitudinal sides of the mattress, there may be provided a layer of stitched cellulose cloth with an intermediate layer of foam and a covering material disposed over that layer.”). A person of ordinary skill in the art would understand that, once assembled, the springs are secured in place—that is, they will be “affixed” in the channels. If not, the springs would move or tip over

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and the mattress would no longer be functional. I have seen no evidence that the mattress described in GB '433 would not work as described in the patent, as a functional mattress.

85. Second, the springs in GB '433 “reinforc[e] the body,” as required by claim 1 of the '763 patent. Plaintiffs argued that because the GB '433 mattress “offers the same comfort as a pure foam mattress,” the springs somehow do not reinforce the body. This makes little sense. GB '433 specifically instructs that the combination of the “spring elements” and the “channels in the foam,” in which the spring elements “are held on two sides by the fixed foam webs,” “act[s] as an additional reinforcement due to the different elastic properties of the springs and the foam web material.” GB '433 at 2:92–95. A person of ordinary skill in the art would understand that springs in a channel in a body would reinforce the body. Indeed, the asserted patents describe springs as one type of insert to support and reinforce the mattress: “[A] foam body 12 may have one or more non-foam inserts, such as loose or pocketed springs, a string of connected pocket springs, or any other material or construction suitable for adding support to a surface of the mattress 10.” '763 patent at 3:20–24; *see also, e.g., id.* at 1:56 (“reinforcing pocket coils”), 3:26–27 (“a row of springs placed into the channel 19 to reinforce the mattress 10”). GB '433 teaches that the springs support the body of the mattress—otherwise, the top surface would sag and have uneven characteristics.

(ii) Obviousness based on GB '433

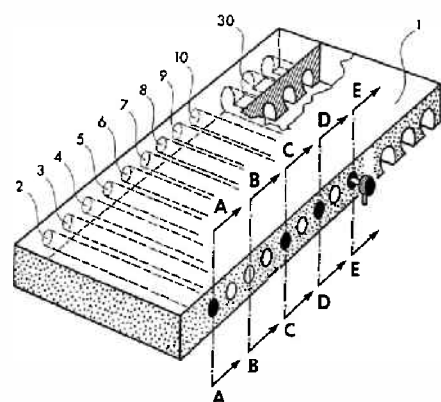
86. To the extent any of the limitations of these claims are not expressly or inherently disclosed in GB '433, the asserted mattress claims would have been obvious to a person of ordinary skill in the art in light of GB '433 alone, as well as obvious over GB '433 in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine GB '433 with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

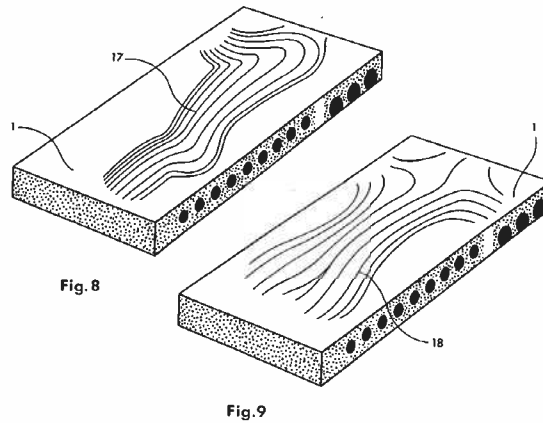
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87. For example, to the extent GB '433 is assumed not to expressly or inherently disclose inserts (springs) “affixed” in the channels, it would have been obvious to modify GB '433 such that the inserts are affixed, which would ensure that the mattress functions like it is supposed to, without the springs being displaced during use. It would also have been obvious for the springs to reinforce the body of the mattress, as the Asserted Patents admit could be done. '763 patent at 3:20–24.

c. DE '214 Anticipates and/or Renders Obvious the Asserted Mattress Claims Under the Court's Constructions and/or Under Plaintiffs' Incorrect Claim Interpretations

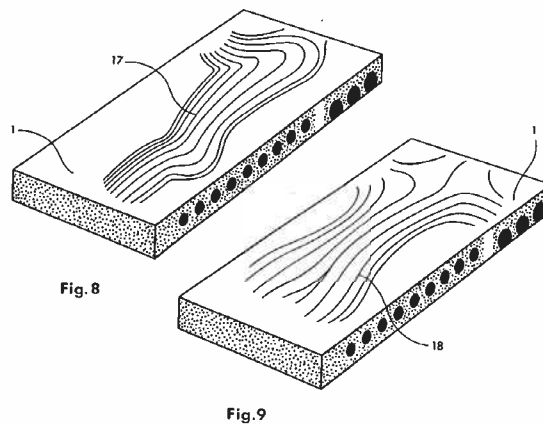
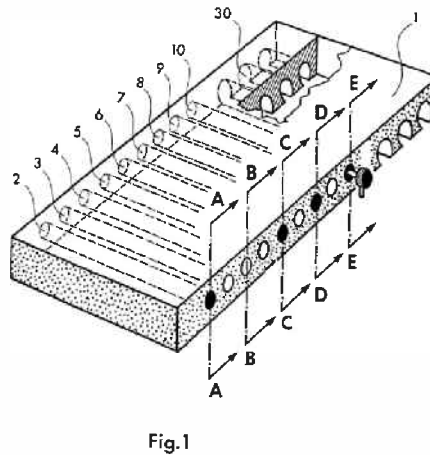
88. DE '214 anticipates and/or renders obvious claims 1, 4, 5, 6, and 7 of the '763 patent under the Court's claim constructions and/or under Plaintiffs' incorrect claim interpretations, as shown below:

'763 Patent Claim Chart: DE '214	
[1] A mattress comprising:	DE '214 discloses a mattress to support the reclining human body. DE '214 at 2; claim 1.
[1.1a] a body made of foam having a mechanical characteristic,	<p>DE '214 a rectangular “mattress part 1.” DE '214 at 2, 6–7, Figs. 1, 8–9.</p>  <p style="text-align: center;">Fig.1</p> <p>The court construed “body” as “physical structure.” DE '214 discloses a body under this construction as described above.</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: DE '214**

[1.1b] the body having a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces,

Mattress part 1 has a top surface, a bottom surface, a first and second side surfaces, and a first and second end surfaces, as depicted in Figures 1 and 8–9.



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'763 Patent Claim Chart: DE '214

[1.1c] at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom; and

The bottom surface of mattress part 1 includes “a plurality of channels, 2–10, 22, 30) arranged side by side,” DE '214 at claim 1, where the “channels can also be downwardly open, as shown by 30,” and the channels can “penetrate the mattress part perpendicularly.” *Id.* at 6.

The court construed “channel” as “a long, narrow groove.” The channels shown in DE '214, such as channels 30, are long, narrow grooves.

Although the walls of non-rectangular channels may not be perpendicular to the surface of the body in Figure 1, the channels themselves do extend perpendicularly into the body, which is what the claims require. Indeed, DE '214 even states explicitly that the circular channels shown in the figures “penetrate the mattress part perpendicularly.” *Id.* at 6. Furthermore, a person of ordinary skill in the art would understand that the channels shown in a reference like DE '214 could be of any shape, including rectangular. DE '214 does not state that the only shape of channel possible is the circular shape shown in Figure 1 and 8–9.

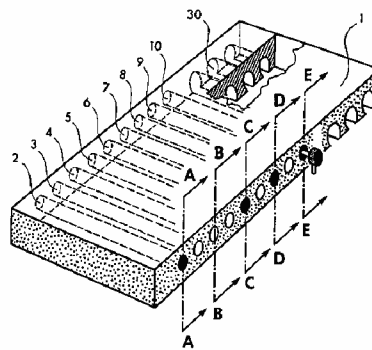


Fig.1

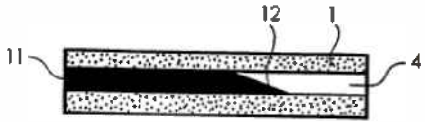
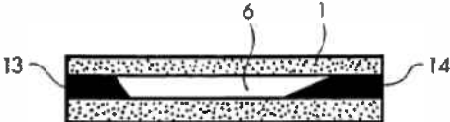
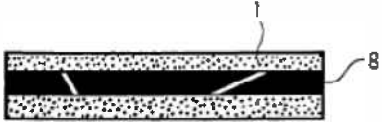
[1.2a] a plurality of inserts,

Mattress part 1 includes that the “plurality of channels” have “an insert piece inserted therein.” DE '214 at 2.

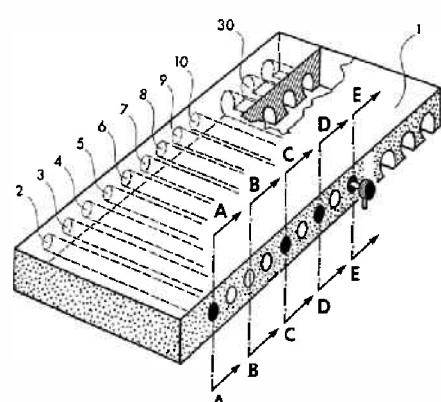
See also:

DE '214 at 3, 5, 9, claim 1 (“a plurality of channels, 2–10, 22, 30) arranged side by side, into which the insert pieces (11, 13, 14, 15, 21, 23, 24) having different elasticities are inserted.”


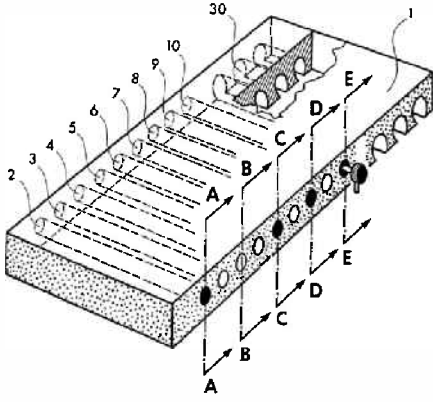
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'763 Patent Claim Chart: DE '214	
	<p>Figures 3–5 depict some of the inserts taught by DE '214.</p>  <p>Fig.3 Section B-B</p>  <p>Fig.4 Section C-C</p>  <p>Fig.5 Section D-D</p>
[1.2b] each insert having a mechanical characteristic different from the mechanical characteristic of the foam and	DE '214 teaches that “insert pieces having different elasticities are inserted in such a way that the mattress part forms a pattern with locally different resistance values.” DE '214 at 2; <i>see also id.</i> at Abstract, 3, 5–6, 8.
[1.2c] affixed within one of the plurality of channels,	Within the “plurality of channels” in mattress part 1 the “inserted pieces” are “inserted therein.” DE '214 at 2–3. The insert pieces “fill the channels.” <i>Id.</i> at 3. A person of ordinary skill in the art would understand that the inserts shown in DE '214 would be held in place, at minimum, by friction.
[1.2d] each insert reinforcing the body.	<p>DE '214 teaches that the mattress part is “reinforced” by the “plurality of insert pieces.” DE '214 at 3; <i>see also id.</i> at 2.</p> <p>DE '214 discloses “customization” by using “channels and the insert pieces having different elasticities.” DE '214 at 3. For example, a person of ordinary skill in the art would understand that the channels 30 could be filled with foam with a high compression resistance value. <i>See id.</i> at 2–3.</p>
[4] The mattress of claim 1 further comprising	<i>See</i> claim 1, above.
[4.1a] a material that covers at least one of the channels,	A person of ordinary skill in the art would understand that the mattress in DE '214 would have a material to cover the channels, such as a mattress topper or a cloth cover.

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'763 Patent Claim Chart: DE '214	
	To the extent this limitation is not expressly or inherently disclosed in DE '214, it would be obvious to a person of ordinary skill in the art, as explained below.
[4.1b] the material securing at least one of the inserts within one of the channels.	<p>A mattress topper or cloth cover would help secure the inserts within the channels.</p> <p>To the extent this limitation is not expressly or inherently disclosed in DE '214, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[5] The mattress of claim 4 further comprising	<i>See claim 1, above.</i>
[5.1] a mattress cover surrounding the mattress.	<p>A person of ordinary skill in the art would understand that the finished mattress in DE '214 would have at least a fabric material cover surrounding the entire mattress for consumer use.</p> <p>To the extent this limitation is not expressly or inherently disclosed in DE '214, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[6] The mattress of claim 1, wherein	<i>See claim 1, above.</i>
[6.1] at least one of the inserts is substantially flush with the at least one of the top and bottom surfaces.	<p>DE '214 teaches that the “insert pieces fill the channels over the entire length thereof,” DE '214 at 3, and depicts embodiments in which the inserts are flush with the surface of mattress part 1. <i>See, e.g.,</i> Figure 2, below, which depicts “a completely filled channel.” <i>Id.</i> at 5.</p>  <p style="text-align: center;">Fig.1</p>

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'763 Patent Claim Chart: DE '214	
	 <p>Fig.2 Section A-A</p>
[7] The mattress of claim 1, wherein	See claim 1, above.
[7.1] each channel extends to an opening in at least one of the surfaces adjacent to the channel surface.	<p>DE '214 teaches that the channels can extend to an opening in the surface of mattress part 1. The channels can be “downwardly open, as shown by 30.” DE '214 at 6. The channels extend the width of the mattress. See <i>id.</i> at Figs. 1, 8–9.</p>  <p>Fig.1</p>

(i) Obviousness based on DE '214

89. To the extent any of the limitations of these claims are not expressly or inherently disclosed in DE '214, the asserted mattress claims would have been obvious to a person of ordinary skill in the art in light of DE '214 alone, as well as obvious over DE '214 in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine DE '214 with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. See *infra* Section VIII.E.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**1) It would have been obvious to cover the channels to secure the inserts in the channel**

90. To the extent DE '214 is assumed not to expressly or inherently disclose a material that covers at least one of the channels, the material securing at least one of the inserts within one of the channels, it would have been obvious to modify DE '214 to combine it with that known element to yield the mattress claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. It was well known in the art at the time to put a solid base below a mattress, such as a solid support base or a firmer layer of foam. A person of ordinary skill in the art would understand that such a base (*i.e.*, material) would help secure the inserts in place in the channel. Indeed, this was explicitly taught by numerous closely related references within precisely the same field of endeavor, such as Kennaway, GB '433, Regan, and Antinori . *See* Kennaway at 2:26–28, 5:7–25; GB '433 at 3:77–83; Regan at 3:5–14; Antinori at 4:23–27. It therefore would have been obvious to a person of ordinary skill in the art to cover the downwardly open channels with a material to secure inserts within the channels in DE '214.

2) It would have been obvious to surround the mattress with a cover

91. To the extent DE '214 is assumed not to expressly or inherently disclose a mattress cover surrounding the mattress, it would have been obvious to modify DE '214 to combine it with that known element to yield the mattress claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. It has long been standard in the mattress industry, since well before the alleged priority date of October 17, 2002, to cover a mattress core with a conventional mattress cover or other material prior to use as a mattress. A cover protects the mattress core from dirt and contamination which can increase the useful life of the mattress, often provides a flammability barrier, and offers an aesthetic, differentiating, and finished consumer product. Several references also raised in this case specifically describe the use of a mattress cover, including:

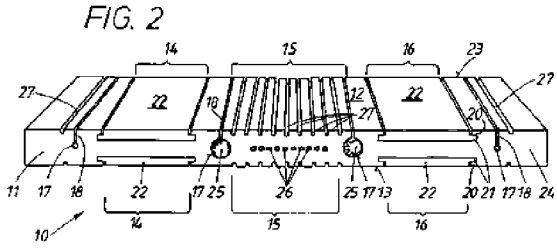
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- Antinori at 4:39–43 (“durable cloth cover”);
- Kennaway at Abstract (“flexible cover”); and
- GB ’433 at 3:5 (“cloth sleeve”).

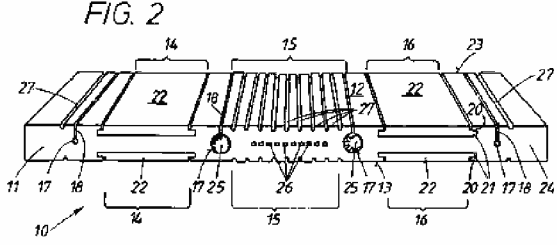
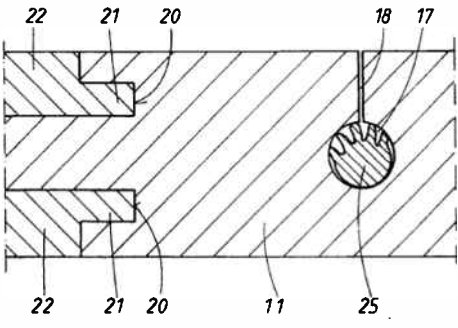
It would have been obvious to combine DE ’214 with any of these references, as they all relate to standard mattress design.

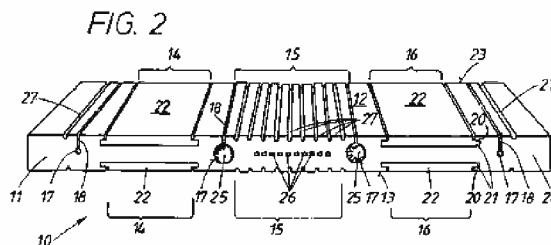
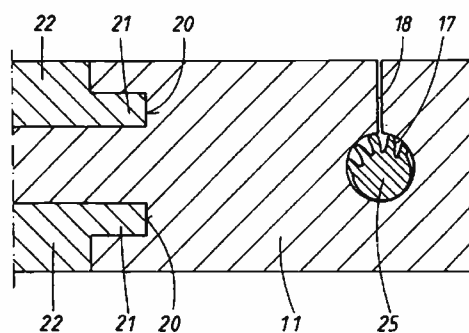
d. Peinsipp Anticipates and/or Renders Obvious the Asserted Mattress Claims Under the Court’s Constructions and/or Under Plaintiffs’ Incorrect Claim Interpretations

92. Peinsipp anticipates and/or renders obvious claims 1, 4, 5, 6, and 7 of the ’763 patent under the Court’s claim constructions and/or under Plaintiffs’ incorrect claim interpretations, as shown below:

’763 Patent Claim Chart: Peinsipp	
[1] A mattress comprising:	Peinsipp discloses “a mattress with a first foam area and a second foam area.” Peinsipp at 2.
[1.1a] a body made of foam having a mechanical characteristic,	<p>Peinsipp discloses a “first foam area 11, which constitutes the actual core of the mattress”—<i>i.e.</i>, a “body” made of foam. Peinsipp at 3.</p> <p>The court construed “body” as “physical structure.” Peinsipp discloses a body under this construction as described above.</p> 
[1.1b] the body having a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces,	The “first foam area 11” has a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces, as depicted in Figure 2.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Peinsipp**

	<p style="text-align: center;">FIG. 2</p> 
<p>[1.1c] at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom; and</p>	<p>Peinsipp teaches that “cutouts 17 “are provided” in the “first foam area 1.” Peinsipp at 4, claim 12. The cutouts “are connected with the top resting surface 12” of the first foam area 1 “through a slit 18.” <i>Id.</i> at 4. The “cutouts 17” and the “slit[s] 18” are “channels” as the Court has construed that term—they are long, narrow grooves.</p> <p>The court construed “channel” as “a long, narrow groove.” The cutouts 17 and slits 18 are long, narrow grooves.</p> <p>The slits 18 connected to cutouts 17 “extend[]” perpendicularly into first foam area 1, as depicted in Figures 1 and 3.</p> <p style="text-align: center;">FIG. 3</p> 
<p>[1.2a] a plurality of inserts,</p>	<p>Peinsipp teaches that “an insertion element,” also called a “supporting wedge,” “lordosis wedge,” or “supporting members 25,” are inserted into the “cutouts” such that they “adapt to the inner walls of the cutout 17,” as depicted in Figures 2 and 3. Peinsipp at 4; <i>see also id.</i> (foam area 22).</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Peinsipp****FIG. 3**

[1.2b] each insert having a mechanical characteristic different from the mechanical characteristic of the foam and

Peinsipp teaches that the “cutouts” 17 “accommodate the supporting members 25, the so-called lordosis wedges. The supporting members 25 . . . may, depending on the load applied by a person or depending on the curvature of the lumbar spine, be chosen from different levels of hardness. If a user has a hollow back, a harder wedge is selected to achieve a correspondingly high support pressure.” Peinsipp at 4. These “support members” thus have a mechanical characteristic different from that of first foam area 1.

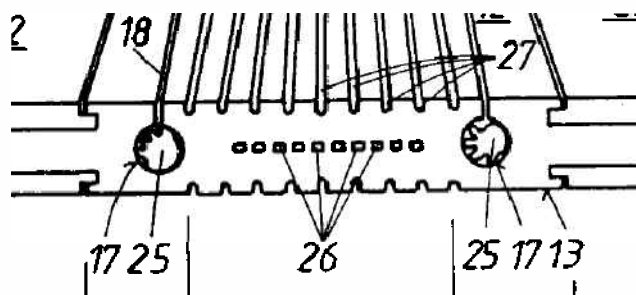
[1.2c] affixed within one of the plurality of channels,

Peinsipp teaches that the “support members 25” are inserted into the cutouts 17 such that the “support members 25 adapt to the the inner walls of the cutout 17.” Peinsipp at 4.

Peinsipp thus teaches that the “support members 25” are affixed within the “cutouts 17,” as depicted in this enlarged image of Figure 2.

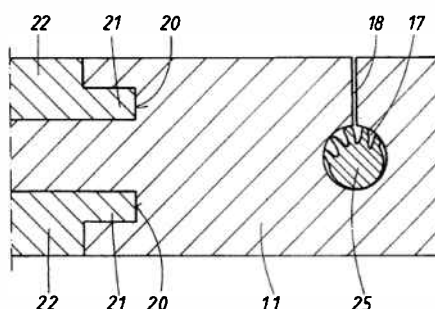
HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY

'763 Patent Claim Chart: Peinsipp



As depicted in Figure 3 below, the “support wedges have the shape of a hand in the cross-sectional view.” *Id.* at 4.

FIG. 3



[1.2d] each insert reinforcing the body.

Peinsipp teaches that the “insert elements” 17 are “support wedges” of varying “hardness” which reinforce the first foam area 1. Peinsipp at 4.

See also:

“If a user has a hollow back, a harder wedge is selected to achieve a correspondingly high support pressure.” *Id.*

[4] The mattress of claim 1 further comprising

See claim 1, above.

[4.1a] a material that covers at least one of the channels,

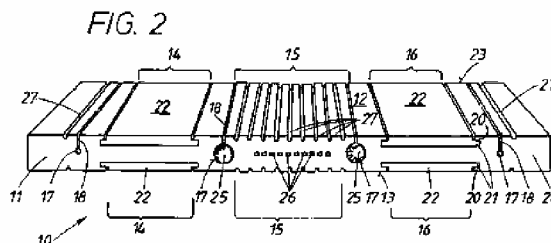
Peinsipp teaches that the first foam area 1 “may be surrounded by covers to form the mattress as a whole. Padding may be provided as well.” Peinsipp at 3.

[4.1b] the material securing at least one of the inserts within one of the channels.

A person of ordinary skill in the art would understand that a cover surrounding the mattress would help secure the inserts within the channels.

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'763 Patent Claim Chart: Peinsipp	
[5] The mattress of claim 4 further comprising	<i>See</i> claim 1, above.
[5.1] a mattress cover surrounding the mattress.	First foam area 1 “may be surrounded by covers to form the mattress as a whole. Padding may be provided as well.” Peinsipp at 3.
[6] The mattress of claim 1, wherein	<i>See</i> claim 1, above.
[6.1] at least one of the inserts is substantially flush with the at least one of the top and bottom surfaces.	<p>A person of ordinary skill in the art would understand that the inserts (“support members”) could be substantially flush with the top surface. Peinsipp discloses reinforcing parts with “the shape of a hand” with the goal of reinforcing the mattress. One such shape that would reinforce the mattress would include a portion that extends through slit 18 to be substantially flush with the top surface. <i>See also id.</i> at 3 (second foam area 22).</p> <p>FIG. 2</p>
[7] The mattress of claim 1, wherein	<i>See</i> claim 1, above.
[7.1] each channel extends to an opening in at least one of the surfaces adjacent to the channel surface.	<p>Peinsipp teaches that the “cutouts 17 are provided diagonally to the horizontal direction of the mattress. These cutouts 17 [] extend diagonally between the two longitudinal sides 23 and 24.” Peinsipp at 4.</p> <p>FIG. 1</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Peinsipp****(i) Obviousness based on Peinsipp**

93. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Peinsipp, the asserted mattress claims would have been obvious to a person of ordinary skill in the art in light of Peinsipp alone, as well as obvious over Peinsipp in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Peinsipp with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

1) It would have been obvious for at least one insert to be substantially flush with the top surface

94. To the extent Peinsipp is assumed not to expressly or inherently disclose that at least one of the inserts is substantially flush with the at least one of the top and bottom surfaces, it would have been obvious to modify Peinsipp to combine it with that known element to yield the mattress claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. One of the objectives of the inserts (reinforcement parts) is to reinforce the mattress. One way of achieving this reinforcement would be to have the reinforcement part extend all the way to the surface of the mattress. This would achieve a firmer support profile in that area of the mattress, which would help achieve the objectives of Peinsipp. Additionally, this would result in fewer necessary cuts in one of the mattress layers, thus simplifying manufacture

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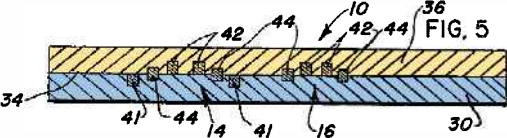
and reducing processing (*i.e.*, cutting) cost. Indeed, this was explicitly taught by numerous closely related references within precisely the same field of endeavor. *See, e.g.*, Kennaway at Figure 4; GB '433 at Fig. 1; DE '214 at 3, Fig. 2; Regan at Fig. 5. It therefore would have been obvious to a person of ordinary skill in the art to make one of the inserts substantially flush with the top surface.

2. Invalidity of the Mattress Claims Under Plaintiffs' Incorrect Claim Interpretation

95. In addition to the references above, the following references also anticipate and/or render obvious the asserted mattress claims under the Plaintiffs' incorrect interpretation of the claims.

a. Regan Anticipates and/or Renders Obvious the Asserted Mattress Claims Under Plaintiffs' Incorrect Claim Interpretation

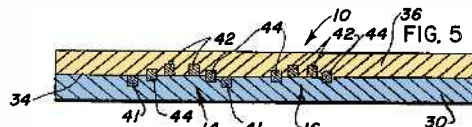
96. Regan anticipates and/or renders obvious claims 1, 4, 5, 6, and 7 of the '763 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'763 Patent Claim Chart: Regan	
<p>[1] A mattress comprising:</p>	<p>Regan describes “a single- or multi-layer mattress.” Regan at 1:31–32.</p> <p><i>See also:</i></p> <p>“According to the present invention, a single- or multi-layered mattress is provided which prevents ‘hammocking’ of the human body by providing several sets of support ribs of relatively low compressibility which extend transversely of the mattress and which are spaced longitudinally apart from one another at points corresponding to the areas of greatest body weight.” <i>Id.</i> at 1:31–37; <i>see also id.</i> at 4:1–12, Fig. 8.</p> 

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Regan**

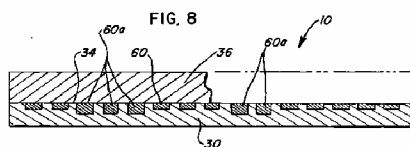
[1.1a] a body made of foam having a mechanical characteristic,

Under Plaintiffs' interpretation of the claims, Regan discloses this element.⁷ The mattress is made "of a resilient material, such as molded foam," and "may be fabricated from two similar or dissimilar layers." Regan at 2:17–22. In the multi-layer embodiment, the mattress includes a lower layer 30 (blue) and an upper layer 36 (yellow), either of which is the "body" under Plaintiffs' interpretation of the claims. *Id.* at 3:29–34.



See also:

"FIG. 1 illustrates a mattress, generally designated 10, embodying the present invention. The mattress 10 is illustrated as a single layer 11 of a resilient material, such as molded foam, but it is to be understood that the mattress 10 may be fabricated from two similar or dissimilar layers, as described below." *Id.* at 2:17–22; *see also id.* at 4:1–12, Fig. 8.



[1.1b] the body having a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces,

The upper and lower layers 30 and 36, as rectangular prisms, have a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces. Regan at 3:9–12.

See also:

"The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30." *Id.* at 3:9–15; *see also id.* at 4:1–12, Fig. 8.

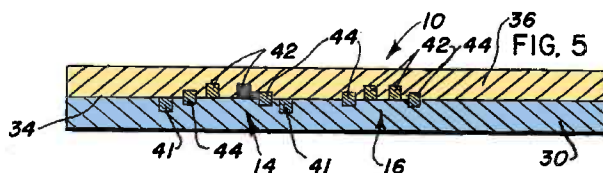
⁷ I disagree with Plaintiffs' assertion that a single layer of a multi-layer mattress, where all channels are on the internal surface of the mattress, is a "body." But, under the theory of infringement Plaintiffs assert against the Casper Wave, this claim limitation would be disclosed in Regan.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Regan**

[1.1c] at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom; and

The top surface of lower layer 30 and the bottom surface of upper layer 36 have several “recess[es]” 41 and 42, entirely contained within the lower and upper layers, respectively, extending into the mattress perpendicularly. Regan at 3:17–21.

The court construed “channel” as “a long, narrow groove.” Recesses 41 and 42 are “channels” under the court’s construction.

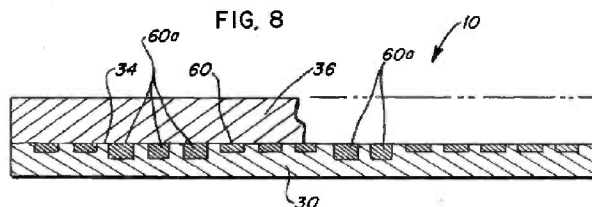


See also:

“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” *Id.* at 3:17–22.

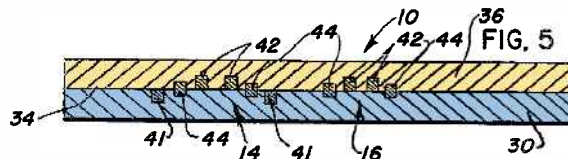
“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” *Id.* at 3:29–38.

Lower layer 30 in Figure 8 also contains “suitable recesses” across its top surface. *Id.* at 4:2.



HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Regan****[1.2a]** a plurality of inserts,

Ribs (*i.e.*, inserts) are affixed in the recesses 41 and 42 in the top surface of lower layer 30 and the bottom surface of upper layer 36. Regan at 3:17–21; *see also id.* at 3:29–38 (“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.”).



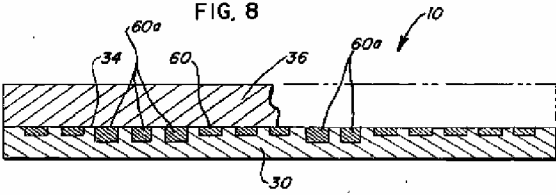
See also:

“According to the present invention, a single- or multi-layered mattress is provided which prevents ‘hammocking’ of the human body by providing several sets of support ribs of relatively low compressibility which extend transversely of the mattress and which are spaced longitudinally apart from one another at points corresponding to the areas of greatest body weight. The ribs extend substantially entirely across the mattress, and each rib is of a width substantially less than the width of an area to be supported.” *Id.* at 1:31–40.

“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof.” *Id.* at 3:17–21.

A person of ordinary skill in the art would understand that the location of the channels in the embodiment in Figure 5 is exemplary, and that the recesses could be located either all within the bottom of the top layer or the top of the bottom layer. *See also id.* at 4:1–12, Fig. 8.

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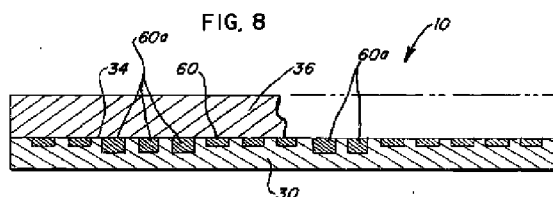
’763 Patent Claim Chart: Regan	
	 <p>FIG. 8</p>
<p>[1.2b] each insert having a mechanical characteristic different from the mechanical characteristic of the foam and</p>	<p>The ribs are “less compressible than the material of the mattress.” Regan at Abstract.</p> <p><i>See also:</i></p> <p><i>Id.</i> at 1:34–35 (the mattress contains “several sets of support ribs of relatively low compressibility which extend transversely of the mattress”).</p> <p><i>Id.</i> at 3:8 (“less compressible ribs disposed therebetween”).</p> <p><i>Id.</i> at 3:52–54 (“the support members 54 and 56 are less compressible than the top layer 36 of the mattress 10”).</p> <p><i>Id.</i> at 2:27–31 (“Disposed within the mattress 10 are two sets 14 and 16 of support ribs 20. Each rib is of a material of less compressibility than then material of the mattress layer 11 and extends substantially entirely across the width of the mattress 10.”); <i>see also id.</i> at 4:1–12, Fig. 8; <i>id.</i> at 4:1–12, Fig. 8; <i>id.</i> at 3:8 (“less compressible ribs disposed therebetween”); <i>id.</i> at 3:52–54 (“the support members 54 and 56 are less compressible than the top layer 36 of the mattress 10”); <i>id.</i> at 2:29–30 (“material of less compressibility”).</p>
<p>[1.2c] affixed within one of the plurality of channels,</p>	<p>Regan teaches that the ribs—<i>i.e.</i>, inserts—“may be glued or otherwise attached (as by tying together) to the surface” of each mattress layer. Regan at 4:1–4. The ribs are also affixed due to the fact that the two layers of material are “join[ed] . . . as by an adhesive, with at least two sets of less compressible ribs disposed therebetween.” <i>Id.</i> at 3:5–8.</p> <p><i>See also:</i></p> <p>Ribs “lie[] in [the] recess[es] within the lower layer 30.” <i>Id.</i> at 3:17–21.</p>

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’763 Patent Claim Chart: Regan

“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” *Id.* at 3:17–22.

“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” *Id.* at 3:29–38.



[1.2d] each insert reinforcing the body.

The ribs (*i.e.*, inserts) are “of relatively low compressibility . . . to decreas[e] the overall compressibility of the mattress at those points where the ribs are located.” Regan at 1:21–43. As such, the ribs provide “enhanced localized support” and reinforce the surrounding mattress layer. *Id.* at 3:26–28. That is, the ribs are “less compressible [*i.e.*, firmer] than the material of the mattress.” Regan at Abstract.

See also:

“The ribs, which may be continuous or discontinuous, are less compressible than the material of the mattress and are spaced apart longitudinally from each other within each set. The sets are spaced apart longitudinally to correspond in position to the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight, and hold the body generally straight.” *Id.* at Abstract.

“According to the present invention, a single- or multi-layered

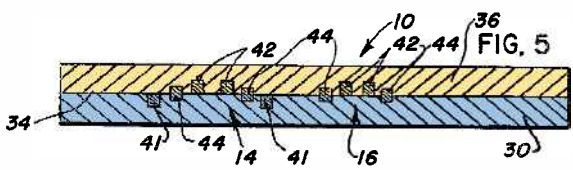
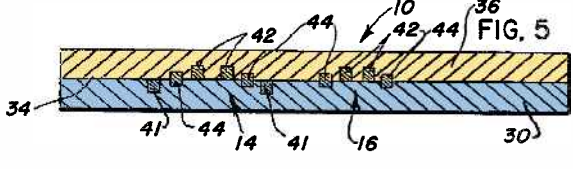
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'763 Patent Claim Chart: Regan	
	<p>mattress is provided which prevents ‘hammocking’ of the human body by providing several sets of support ribs of relatively low compressibility which extend transversely of the mattress and which are spaced longitudinally apart from one another at points corresponding to the areas of greatest body weight. The ribs extend substantially entirely across the mattress, and each rib is of a width substantially less than the width of an area to be supported.” <i>Id.</i> at 1:31–40.</p> <p>“It is readily apparent that, upon the application of body weight to the mattress 10, each rib 20 is compressible independently of the others, thereby supplying the greatest resistance to compression in those areas where the heaviest force is applied.” <i>Id.</i> at 2:47–51; <i>see also id.</i> at 4:1–12, Fig. 8; <i>id.</i> at 3:8 (“less compressible ribs disposed therebetween”); <i>id.</i> at 3:52–54 (“the support members 54 and 56 are less compressible than the top layer 36 of the mattress 10”); <i>id.</i> at 2:29–30 (“material of less compressibility”).</p>
[4] The mattress of claim 1 further comprising	<i>See</i> Claim 1, above.
[4.1a] a material that covers at least one of the channels,	<p>Upper layer 36 covers the recesses in lower layer 30. Regan at 3:5–14. Similarly, lower layer 30 covers the recesses in upper layer 36. <i>Id.</i></p> <p><i>See also:</i></p> <p>“The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30.” <i>Id.</i> at 3:9–15.</p> <p>“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” <i>Id.</i> at 3:29–38.</p>

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'763 Patent Claim Chart: Regan	
[4.1b] the material securing at least one of the inserts within one of the channels.	<p>Upper layer 36 is “join[ed]” to lower layer 30, such as “by an adhesive,” and thus each respective layer secures inserts within the recesses in the other. Regan at 3:5–14, 29–38.</p> <p><i>See also:</i></p> <p>“The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30.” <i>Id.</i> at 3:9–15.</p> <p>“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” <i>Id.</i> at 3:29–38.</p>
[5] The mattress of claim 4 further comprising	<i>See Claim 1, above.</i>
[5.1] a mattress cover surrounding the mattress.	<p>A person of ordinary skill in the art would understand that the mattress described in Regan would have a standard mattress cover.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Regan, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[6] The mattress of claim 1, wherein	<i>See Claim 1, above.</i>
[6.1] at least one of the insert is substantially flush with the at least one of the top and bottom surfaces.	<p>Ribs 41 and 42 are substantially flush with the top surface of lower layer 30 and the bottom surface of upper layer 36, respectively, as depicted in Figure 5.</p> <p>Ribs “41 lie entirely within the lower layer 30,” while “ribs 42 lie entirely within the upper layer 36.” Regan at 3:34–38.</p>

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'763 Patent Claim Chart: Regan	
	
[7] The mattress of claim 1, wherein	See Claim 1, above.
[7.1] each channel extends to an opening in at least one of the surfaces adjacent to the channel surface.	<p>Regan teaches that each recess (<i>i.e.</i>, channel) extends to an opening in at least one of the surfaces adjacent to the recess surface (<i>i.e.</i>, the side surfaces), as depicted in the “longitudinal sectional view” of Figure 5.</p>  <p>See also:</p> <p>“The ribs extend substantially entirely across the width of the mattress 10.” <i>Id.</i> at 2:30–31.</p>

(i) Rebuttal to Plaintiffs’ preliminary injunction arguments

97. In Plaintiffs’ reply brief in support of their Motion for a Preliminary Injunction, Plaintiffs argued that Regan did not disclose two limitations: (1) inserts “affixed” within the channels; and (2) inserts that “each reinforc[e] the body.” Both assertions are incorrect.

98. First, Plaintiffs argued that because the ribs “lie[]” in the recesses, they are not “affixed.” See D.I. 51 at 20. This is incorrect. As explained in the chart above, Regan discloses the use of glue to hold inserts in place. See Regan at 4:1–4 (teaching that the ribs “may be glued or otherwise attached (as by tying together) to the surface” of each mattress layer). Regan also teaches that the two layers are laminated together, which would secure the ribs permanently in place in the mattress. *Id.* at 3:5–8.

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99. Second, Plaintiffs argued that Regan was silent as to whether the ribs reinforce layer 30. *See* D.I. 51 at 21. This is incorrect, and also would not prevent Regan from anticipating the claims even if Plaintiffs were correct. Plaintiffs admit that the ribs are “less compressible than the upper layer 36 in order to provide enhanced localized support.” *Id.* (citing Regan at 3:26–28). Regan teaches that the lower layer 30 and upper layer 36 “may be of the same resilience.” Regan at 3:18–19. If the upper and lower layers are of the same resilience, and if the ribs are less compressible (firmer) than the upper layer 36, it follows that the ribs must also be less compressible (firmer) than the lower layer 30. In any event, as explained above, both lower layer 30 and upper layer 36 are “bodies” as Plaintiffs interpret that term to accuse the Casper Wave of infringing. Because Plaintiffs have already admitted that the ribs in the upper layer reinforce that layer, Plaintiffs effectively concede that the ribs reinforce one of the “bodies” taught by Regan.

(ii) Obviousness based on Regan

100. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Regan, the asserted mattress claims would have been obvious to a person of ordinary skill in the art in light of Regan alone, as well as obvious over Regan in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Regan with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

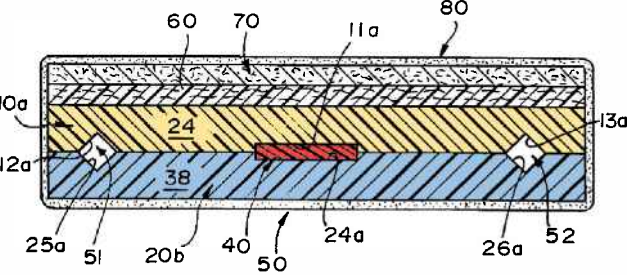
101. For example, to the extent it is assumed that Regan does not expressly or inherently disclose inserts “affixed” in the channels, it would have been obvious to a person of ordinary skill in the art to affix the inserts in the channels. As discussed below, the USPTO has found that affixing using adhesives or heat was an obvious matter of design choice. ’935 FH, 10/17/2013 Office Action at 2; *see also* ’935 FH, 4/9/2014 Office Action at 2; ’620 FH,

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9/11/2015 Office Action at 6. Furthermore, as discussed herein, references such as Antinori disclose placing inserts in a channel after adhesive has been applied to the layer, thus affixing the inserts into the channel. For further example, to the extent it is assumed that Regan does not disclose inserts that “each reinforc[e] the body,” it would have been obvious to a person of ordinary skill in the art to use ribs in channels to reinforce the body, as was well known in the art at the time. And to the extent it is assumed that Regan does not disclose a plurality of channels “extending into the body perpendicularly” from the surface, it would have been obvious to a person of skill in the art to have the channels extend perpendicularly, as that was well-known in the art, and was specifically taught and disclosed for example in GB ’433 at 1:67–71 and Fig. 1.

b. Antinori Anticipates and/or Renders Obvious the Asserted Mattress Claims Under Plaintiffs’ Incorrect Claim Interpretation

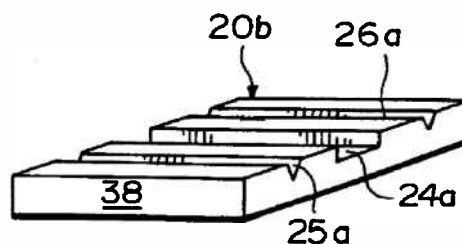
102. Antinori anticipates and/or renders obvious claims 1, 4, 5, 6, and 7 of the ’763 patent under Plaintiffs’ incorrect claim interpretation, as shown below:

’763 Patent Claim Chart: Antinori	
<p>[1] A mattress comprising:</p>	<p>Antinori describes a “novel multi-ply mattress.” Antinori at 2:25–26.</p> <p><i>See also:</i></p> <p>“The present invention provides a novel multi-ply mattress which achieves all advantages of known mattresses and provides the same at relatively low cost.” <i>Id.</i> at 2:25–27.</p> 

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[1.1a] a body made of foam having a mechanical characteristic,

Under Plaintiffs' interpretation of the claims, Antinori discloses this element.⁸ Under Plaintiffs' incorrect interpretation of the claims, layer portion 20b is a body of foam latex with a mechanical characteristic (*i.e.*, an Indentation Load Value (ILD) of 38). Antinori at 3:57–66. The corresponding layer that goes on top of layer portion 20b (layer portion 10a) would likewise be a body under Plaintiffs's interpretation of the claims.



[Excerpt of Fig. 3]

See also:

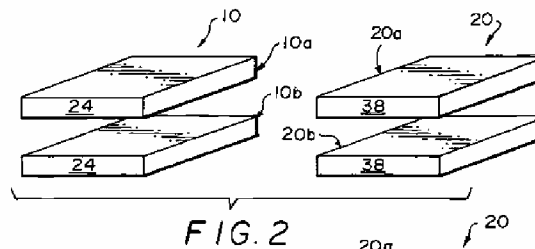
“In the simplest form of the invention, two layers of mattress materials, preferably foam latex, are provided which differ from each other in their Indentation Load Deflection (ILD) values.” *Id.* at 2:27–30.

“A novel mattress constructed in accordance with this invention is fabricated from several layers, cores, laminates or layer portions differing in Indentation Load Deflection (ILD) values, but each ‘starter’ core or layer is constructed from latex rubber, preferably manufactured from 100 percent organic Talalay latex which creates ultimate latex foam.” *Id.* at 3:23–28.

⁸ I disagree with Plaintiffs' assertion that a single layer of a multi-layer mattress, where all channels are on the internal surface of the mattress, is a “body.” But, under the theory of infringement Plaintiffs assert against the Casper Wave, this claim limitation would be disclosed in Antinori.

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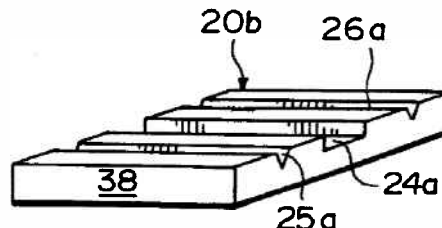
'763 Patent Claim Chart: Antinori



“Reference numerals 11 and 21 define bisecting planes of the respective layers 10, 20 along which the layers are cut or sliced by conventional saws to separate the layer 10 into layer portions 10a, 10b (FIG. 2) and the layer 20 into layer portions 20a, 20b. The peripheral dimensions of the layer portions 10a, 10b, 20a and 20b are identical and correspond to those of the layers 10, 20, respectively, and the only change is that the thickness of the layer portions 10a, 10b and 20a, 20b have been halved relative to the respective layers 10, 20.” *Id.* at 3:62–4:4.

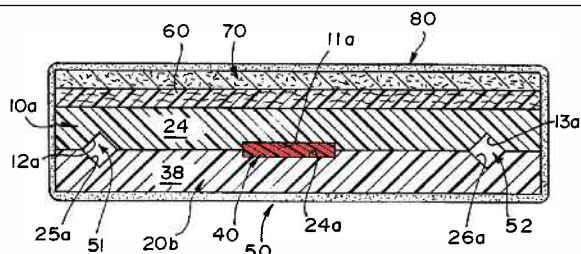
[1.1b] the body having a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces,

As a rectangular prism, as seen in Fig. 3, layer portion 20b has a top surface, bottom surface, a first and second side surfaces and a first and second end surfaces. Antinori at Fig. 3.



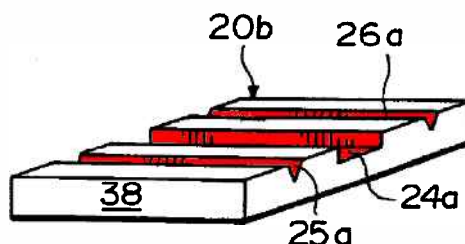
[1.1c] at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom; and

The top surface of layer portion 20b includes a plurality of “transverse channels” (*e.g.*, channel 24a) that extend into layer portion 20b perpendicularly from the surface. Antinori at 4:5–14. While Figure 4 depicts only a single channel (24a) in the medial region, Antinori teaches that the mattress can have “one or more” recesses in that region. *Id.* at 2:39–43, 3:10–18. The “transverse rectangularly outwardly opening groove, channel or recess” taught by Antinori is also reflected by 11a in Fig. 4.

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[Excerpt of Fig. 4 (annotated)]

The court construed “channel” as “a long, narrow groove.” While Fig. 4A depicts element 11a as being wide, Antinori expressly calls 11a a “groove, channel, or recess.” As explained above, Antinori also teaches that the mattress can have “one or more” recesses in that region. A person of ordinary skill in the art would thus understand Antinori to disclose long, narrow grooves in the medial region of the mattress. *See* Antinori at 2:39–43, 3:10–18, 4:5–14.



[Excerpt of Fig. 3 (annotated)]

See also:

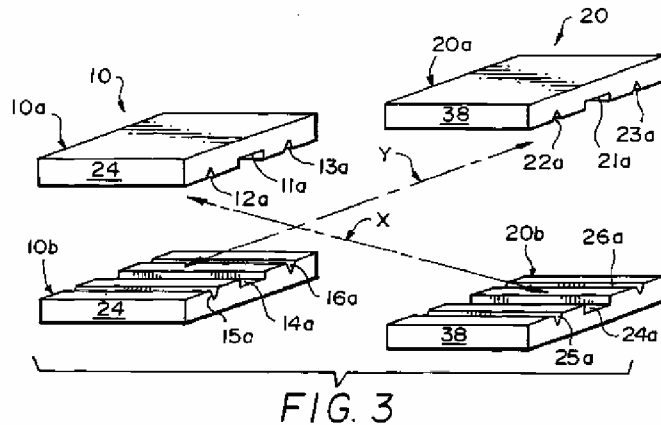
“Preferably matching recesses are formed in the first and second layer portions of both layers. Medial recesses receive postural inserts of relatively high ILD values.” *Id.* at Abstract.

“FIG. 3 is a perspective view similar to FIG. 1, and illustrates each of the layer portions identically provided with transverse recesses in opposite longitudinal ends thereof and a medial portion therebetween with all of the recesses being symmetrical to the four layer portions.” *Id.* at 3:1–5.

“The layer portions 10a, 10b, 20a and 20b are thereafter provided with identically located cross-matching transverse grooves, channels or recesses by conventional cutting tools,

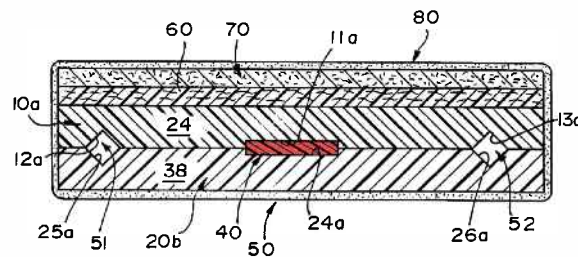
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such as saws. The layer portion 10a is provided with a centrally located transverse rectangularly outwardly opening groove, channel or recess 11a and on opposite sides thereof is a transverse triangular outwardly opening groove, channel or recess 12a, 13a. Identical transverse channels, slots or recesses 14a, 15a, 16a; 21a, 22a, 23a and 24a, 25a, 26a are formed in the respective layer portions 10b, 20a and 20b.” *Id.* at 4:5–14.



[1.2a] a plurality of inserts,

One or more inserts (*e.g.*, insert 40) are placed in the medial recesses of layer portion 20b. Antinori at 2:39–43, 3:10–18, 4:18–27. While Figure 4 depicts only a single insert, Antinori teaches that multiple inserts can be placed within multiple channels in the medial portion of the mattress. *See id.*



[Excerpt of Fig. 4 (annotated)]

See also:

“Medial recesses receive postural inserts of relatively high ILD values” *Id.* at Abstract.

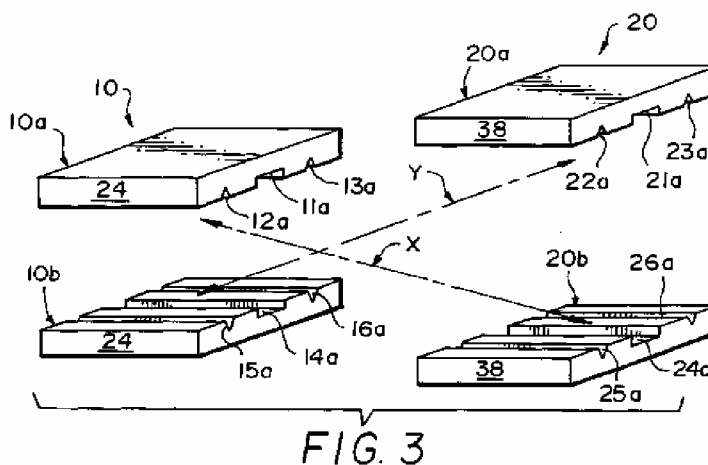
“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer

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'763 Patent Claim Chart: Antinori

portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” *Id.* at 2:39–51.

“Furthermore, through the utilization of one or more transverse recesses, such as the recesses 11a, 24a and 14a, 21a, postural support can be firmed in a selective fashion through the insert 30, while the channels or voids 51, 52 provide necessary pressure relief at the head and foot sections, respectively, of the mattress 50.” *Id.* at 5:1–6.



“The method as defined in claim 15 including the step of placing an insert in an other of the another recesses prior to the performance of the aligning steps.” *Id.* at Claim 16.

[1.2b] each insert having a mechanical characteristic different from the mechanical characteristic of the foam and

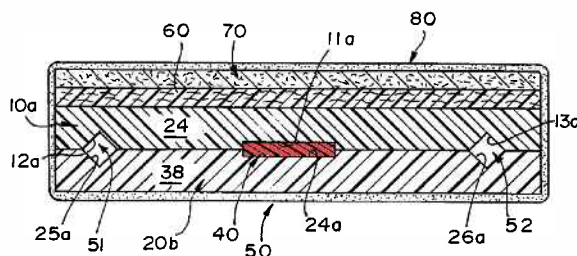
The inserts (such as insert 40) “hav[e] a relatively high Indentation Load Deflection (ILD) value, such as ILD 60,” which is different from the mechanical characteristic of the foam (which has an ILD value of 38). Antinori at 4:19–21.

See also:

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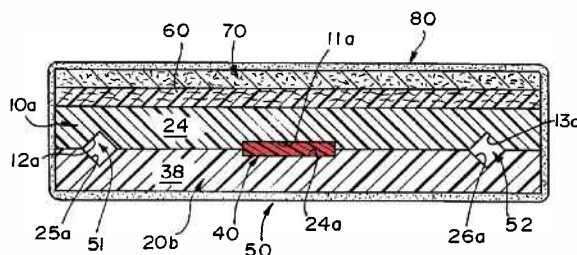
'763 Patent Claim Chart: Antinori

“[A]n insert 40 (FIG. 4), preferably latex having a relatively high Indentation Load Deflection (ILD) value, such as ILD 60, is inserted in one of the central recesses 11a, 24a and one of the central recesses 14a, 21a. The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4. The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” *Id.* at 4:17–31.



[1.2c] affixed within one of the plurality of channels,

One or more inserts (e.g., insert 40) are affixed in the medial recesses of layer portion 20b using adhesive. Antinori at 2:39–43, 3:10–18, 4:18–27.



[Excerpt of Fig. 4 (annotated)]

See also:

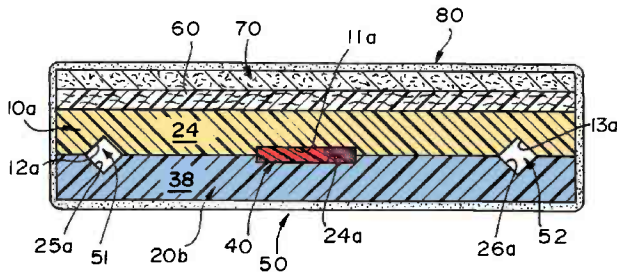
“Medial recesses receive postural inserts of relatively high ILD values” *Id.* at Abstract.

“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus,

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'763 Patent Claim Chart: Antinori	
	<p>in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” <i>Id.</i> at 2:39–51.</p> <p>“The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4. The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:22–31.</p> <p>The “one or more inserts” are “placed in the central or medial recesses” and affixed therein when the surrounding layer portions are “sandwich[ed]” and “adhesively bo[und].” <i>Id.</i> at 3:11–15.</p>
[1.2d] each insert reinforcing the body.	<p>The inserts, which have higher ILDs (<i>i.e.</i>, greater firmness) than the surrounding foam, “afford desired firmness in the postural region of a person . . . lying upon the completed mattress.” Antinori at 4:28–31, 4:44–46.</p> <p><i>See also:</i></p> <p>The surrounding layer portions are “supplemented by the inserts located at the medial portions.” <i>Id.</i> at 2:48.</p> <p>“The multi-ply mattress thereby affords excellent postural support in the area of the insert.” <i>Id.</i> at 4:44–45.</p> <p>“[A]n insert 40 (FIG. 4), preferably latex having a relatively high Indentation Load Deflection (ILD) value, such as ILD 60, is inserted in one of the central recesses 11a, 24a and one of the central recesses 14a, 21a. The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the</p>

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	<p>layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4. The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:17–31.</p> <p>“Furthermore, through the utilization of one or more transverse recesses, such as the recesses 11a, 24a and 14a, 21a, postural support can be firmed in a selective fashion through the insert 30, while the channels or voids 51, 52 provide necessary pressure relief at the head and foot sections, respectively, of the mattress 50.” <i>Id.</i> at 5:1–6.</p>
[4] The mattress of claim 1 further comprising	<i>See</i> Claim 1, above.
[4.1a] a material that covers at least one of the channels,	<p>Layer portion 10a (yellow) covers the channels in layer portion 20b (blue) (and vice versa). Antinori at 4:23–27.</p>  <p>[Excerpt of Fig. 4 (annotated)]</p> <p><i>See also:</i></p> <p>“The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4.” <i>Id.</i> at 4:22–27.</p>
[4.1b] the material securing at least one of the inserts within one of the channels.	<p>Layer portion 10a secures the inserts within the recesses. Antinori at 4:23–27.</p> <p><i>See also:</i></p>

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'763 Patent Claim Chart: Antinori	
	<p>“The insert 40 is inserted in the recess 24a of the layer portion 20 b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4.” <i>Id.</i> at 4:22–27.</p>
[5] The mattress of claim 4 further comprising	<i>See</i> Claim 1, above.
[5.1] a mattress cover surrounding the mattress.	<p>“FIG. 4 is an enlarged cross-sectional view through a multi-ply mattress which further includes one or more inserts placed in the central or medial recesses prior to sandwiching and adhesively bonding the 24 ILD value layer portion to the 38 ILD value layer portion, a thinner convoluted 24 ILD value layer adhesively bonded to the first mentioned 24 ILD value layer, and a silk fiber blend overlying the convoluted layer with all layers being encapsulated in an outer layer of cloth.” Antinori at 3:10–18.</p> <p><i>See also:</i></p> <p>“A third layer 60 (FIG. 4) of convoluted zoned 24 ILD value compression latex is adhesively bonded to the uppermost surface of the latex layer portion 10a. A silk fiber blend layer 70 is applied atop the convoluted layer 60 and all layers 10a, 20b, 60 and 70 are encapsulated in a durable cloth cover 80 conventionally sewn in place in a conventional fashion.” <i>Id.</i> at 4:37–43.</p>
[6] The mattress of claim 1, wherein	<i>See</i> Claim 1, above.
[6.1] at least one of the insert is substantially flush with the at least one of the top and bottom surfaces.	<p>The claims of Antinori teach an embodiment in which a recess is formed only in one layer, such that the insert is “sandwich[ed] . . . between the first layer portion of the first layer and the second layer portion of the second layer.” Antinori at cl. 4. A person of ordinary skill in the art would understand this embodiment to teach that the insert is flush with the top surface of layer portion 20b.</p> <p><i>See also:</i></p> <p>“The method as defined in claim 1 including the steps of forming a recess in at least the first layer portion of the first</p>

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'763 Patent Claim Chart: Antinori	
	<p>layer, inserting an insert in the recess, and sandwiching the insert between the first layer portion of the first layer and the second layer portion of the second layer.” <i>Id.</i> at Claim 4.</p> <p>“The method as defined in claim 1 including the steps of forming a recess in at least the first layer portion of the first layer prior to the performance of the unitizing step, thereafter inserting an insert in the recess, and preceding the performance of the unitizing step sandwiching the insert between the first layer portion of the first layer and the second layer portion of the second layer.” <i>Id.</i> at Claim 5.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Antinori, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[7] The mattress of claim 1, wherein	<i>See</i> Claim 1, above.
[7.1] each channel extends to an opening in at least one of the surfaces adjacent to the channel surface.	<p>The “transverse channels” (e.g., channel 24a) in layer portion 20b extend to the adjacent side surfaces. Antinori at Fig. 3.</p> <div> </div> <p>[Excerpt of Fig. 3 (annotated)]</p> <p><i>See also:</i></p> <p>“The layer portions 10a, 10b, 20a and 20b are thereafter provided with identically located cross-matching transverse grooves, channels or recesses by conventional cutting tools, such as saws. The layer portion 10a is provided with a centrally located transverse rectangularly outwardly opening groove, channel or recess 11a and on opposite sides thereof is a transverse triangular outwardly opening groove, channel or recess 12a, 13a. Identical transverse channels, slots or recesses 14a, 15a, 16a; 21a, 22a, 23a and 24a, 25a, 26a are formed in the respective layer portions 10b, 20a and 20b.” <i>Id.</i> at 4:5–14.</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**(i) Rebuttal to Plaintiffs’ preliminary injunction arguments**

103. In Plaintiffs’ reply brief in support of their Motion for a Preliminary Injunction, Plaintiffs argued that Antinori did not disclose the following limitations: (1) inserts “affixed” within channels; (2) a “plurality of inserts”; and (3) an insert “substantially flush with the at least one of the top and bottom surfaces.” These assertions are incorrect.

104. Plaintiffs first argued that the inserts in Antinori are not “affixed” because they are merely “placed” or “inserted” into the channel. D.I. 51 at 22. This is incorrect. As Plaintiffs admit, the inserts are “sandwiched” between the upper and lower layers, which are adhesively bonded to each other. *See id.* at 21–22. This sandwiching (*i.e.*, friction) and use of adhesives affixes the inserts into the channels. There is no suggestion in Antinori that the inserts could ever be removed from the channel. Thus, even under Plaintiffs’ incorrect interpretation that “affixing” requires permanence, Antinori expressly satisfies this limitation. *See* Antinori at 4:22–31 (“The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other.”).

105. Plaintiffs also argued that Antinori does not disclose a plurality of inserts in a single mattress, and that Antinori only refers to multiple inserts in the context of “cross assembl[y]” of two mattresses. D.I. 51 at 22. This too is incorrect. The description of Figure 4 refutes this assertion: “FIG. 4 is an enlarged cross-sectional view through a multi-ply mattress which further includes *one or more inserts placed in the central or medial recesses* prior to sandwiching and adhesively bonding the 24 ILD value layer portion to the 38 ILD value layer portion” Antinori at 3:10–18 (emphasis added). Thus, Antinori describes a single mattress with multiple recesses and multiple inserts in the medial section. As explained above, a person of ordinary skill in the art would understand that Antinori discloses that the single recess and insert shown in Figure 4 could be broken up into smaller, narrower channels, each with an insert.

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106. Finally, Plaintiffs argue that Antinori does not disclose an insert that is “substantially flush with the at least one of the top and bottom surfaces,” as required by claim 6 of the ’763 patent. D.I. 51 at 23. Plaintiffs again focus on the depiction of the mattress in Figure 4, while ignoring alternate embodiments disclosed in Antinori. It is true that Figure 4 shows the insert extending beyond the top surface of the bottom layer into a corresponding channel in the bottom of the top layer. But claims 4 through 6 of Antinori describe alternative embodiments in which the channel is cut only into one layer. A person of ordinary skill in the art would understand that the inset would thus be flush with the top surface of the one layer.

(ii) Obviousness based on Antinori

107. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Antinori, the asserted mattress claims would have been obvious to a person of ordinary skill in the art in light of Antinori alone, as well as obvious over Antinori in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Antinori with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

108. For example, to the extent it is assumed that Antinori does not expressly or inherently disclose inserts “affixed” in the channels, it would have been obvious to a person of ordinary skill in the art to affix the inserts in the channels. As discussed below, the USPTO has found that affixing using adhesives or heat was an obvious matter of design choice. ’935 FH, 10/17/2013 Office Action at 2; *see also* ’935 FH, 4/9/2014 Office Action at 2; ’620 FH, 9/11/2015 Office Action at 6.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**1) It would have been obvious to modify Antinori to have several long, narrow grooves**

109. To the extent Antinori is assumed not to expressly or inherently disclose a plurality of channels (*i.e.*, long, narrow grooves), it would have been obvious to modify Antinori to combine it with that known element to yield the mattress claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. The idea of affixing inserts into channels (long, narrow grooves) was known in the art well before the Asserted Patents. *See generally supra* Section VIII. It would have been an obvious substitution to make the wider groove shown in Figure 4 of Antinori into several long, narrow grooves. Indeed, as explained above, this configuration is suggested in Antinori itself. Having several long narrow grooves, as opposed to a single, wider recess, allows gradually changing the firmness of the mattress, rather than a drastic, step change in firmness at the edge of the channel. Such long, narrow grooves are expressly shown in references such as Regan, Peinsipp, Kennaway, and GB '433, any one of which a person of ordinary skill in the art would have been motivated to combine with Antinori, with a reasonable expectation of success. *See* Section VIII.E.

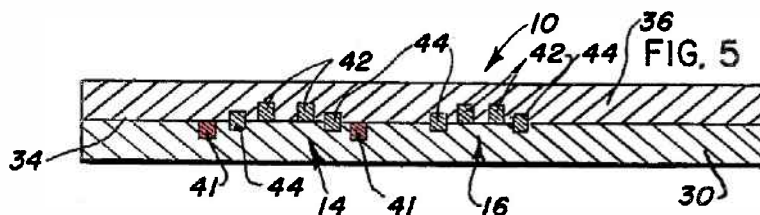
2) It would have been obvious to modify Antinori to make the inserts flush with the top surface

110. To the extent Antinori is assumed not to expressly or inherently anticipate dependent claim 6 of the '763 patent, it would have been obvious to modify Antinori so the insert 40 of the mattress would be flush with the top surface of layer portion 20b, rather than extending into a recess in layer portion 10a. This embodiment is suggested in dependent claims 4–6 in Antinori. This modification of the Figure 4 embodiment would, for example, make it so that fewer cuts were necessary in one of the mattress layers, thus simplifying manufacture and reducing processing (*i.e.*, cutting) cost.

111. Configuring the insert to be flush with the top surface is taught in, *e.g.*, U.S. Patent No. 4,161,045 (Regan). As seen below in Fig. 5, Regan discloses inserts (such as insert

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41, in red below) that are flush with the top surface of lower layer 30. Such a modification is also taught in numerous other highly related references. *See, e.g.*, Kennaway at Fig. 4; GB '433 at Fig. 1; DE '214 at 3, Fig. 2. It would have been obvious to combine the teachings of Antinori with Regan, Kennaway, GB '433, and/or DE '214, as all relate to mattress design and all seek to provide selective firmness over the surface of a mattress.



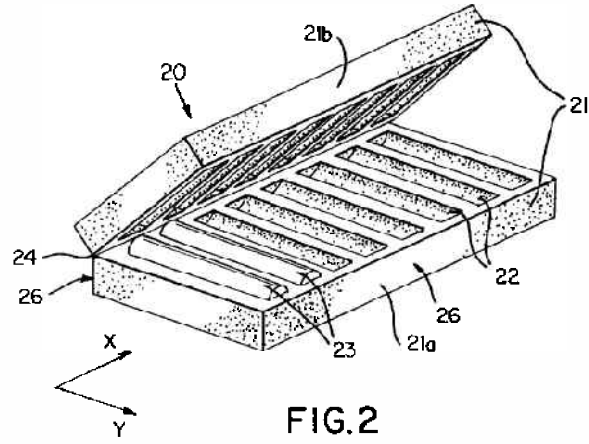
112. Thus, it would have been obvious in light of Antinori itself, as well as when Antinori is considered in light of Regan, Kennaway, GB '433, and/or DE '214, for at least one of the inserts to be substantially flush with the top or bottom surfaces, as required by claim 6 of the '763 patent.

c. Hoffmann Anticipates and/or Renders Obvious the Asserted Mattress Claims Under Plaintiffs' Incorrect Claim Interpretation

113. Hoffmann anticipates and/or renders obvious claims 1, 4, 5, 6, and 7 of the '763 patent under Plaintiffs' incorrect claim interpretation, as shown below:

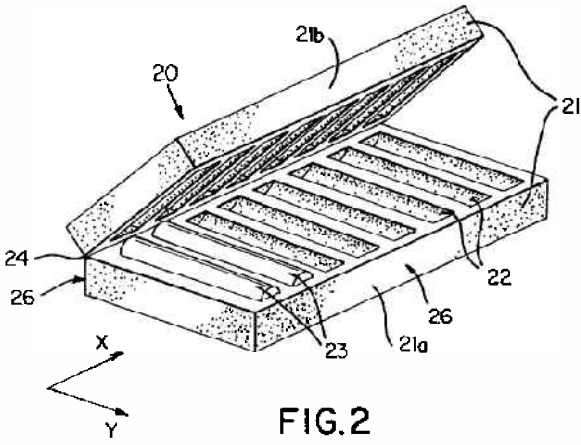
'763 Patent Claim Chart: Hoffmann	
[1] A mattress comprising:	<p>"A mattress or mattress core is provided, and comprises a base member." Hoffmann at Abstract.</p> <p><i>See also:</i></p> <p>"The present invention relates to a mattress or a mattress core comprising a base member having cavities into which inserts can be placed." <i>Id.</i> at 1:4-6.</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Hoffmann**

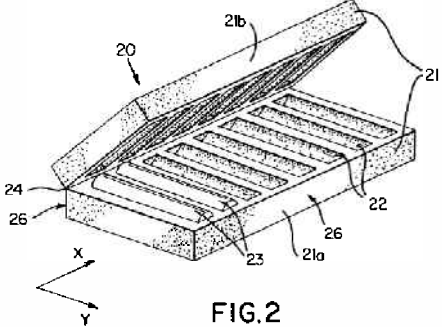
<p>[1.1a] a body made of foam having a mechanical characteristic,</p>	<p>Under Plaintiffs' interpretation of the claims, Hoffmann discloses this element.⁹ "The present invention relates to a mattress or a mattress core comprising a base member having cavities into which inserts can be placed." Hoffmann at 1:4–6, 45–46. Hoffmann teaches that the "base member and the inserts are preferably made of polymeric material, such as polyurethane" foam." <i>Id.</i> at 2:48–50.</p> <p>The "base member" taught by Hoffmann contains "two base member parts 21a and 21b," which are both bodies made of foam under Plaintiffs' interpretation of the claims. Hoffmann at 4:26–30.</p>  <p style="text-align: center;">FIG. 2</p>
<p>[1.1b] the body having a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces,</p>	<p>Base member parts 21a and 21b have a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces. <i>See</i> Hoffmann, Fig. 2.</p>
<p>[1.1c] at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom; and</p>	<p>The bottom surface of base member part 21b and the top surface of base member part 21a contain "cavities that extend in a transverse direction of the mattress," which are "channels" under the Court's construction because they are "long, narrow grooves." Hoffmann at Abstract.</p>

⁹ I disagree with Plaintiffs' assertion that a single layer of a multi-layer mattress, where all channels are on the internal surface of the mattress, is a "body." But, under the theory of infringement Plaintiffs assert against the Casper Wave, this claim limitation would be disclosed in Hoffmann.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Hoffmann**

	<p>Although the walls of non-rectangular channels may not be perpendicular to the surface of the base member in Figure 2, the channels themselves do extend perpendicularly into the base member. Furthermore, Hoffmann specifically teaches that the “elongated cavities”—<i>i.e.</i>, channels—can be “cylindrical with a round cross-section,” as depicted in Figure 2, or they can have “rectangular, oval, polygonal, or other cross-sections.” <i>Id.</i> at 4:4–6. Accordingly, Hoffmann teaches channels that extend perpendicularly into the mattress body.</p> <p><i>See also:</i></p> <p>The “cavities or elongated holes . . . extend over the width of the base member of the mattress.” <i>Id.</i> at 2:25–26.</p> <p>“In addition, the shape of the elongated holes and of the inserts can be selected. . . . Instead of having a round cross-section, it would also be possible to use rectangular, oval, polygonal, or other cross-sections.” <i>Id.</i> at 4:1–11.</p>
<p>[1.2a] a plurality of inserts,</p>	<p>“The present invention relates to a mattress or mattress core comprising a base member having cavities into which inserts can be placed.” Hoffmann at 1:4–6. “Inserts 23” are “adapted to be placed into the base member.” <i>Id.</i> at 47–49.</p>  <p style="text-align: center;">FIG. 2</p>
<p>[1.2b] each insert having a mechanical characteristic different from the mechanical characteristic of the foam and</p>	<p>“The inserts at least in part have different degrees of hardness” from the surrounding mattress. Hoffmann at Abstract.</p> <p><i>See also:</i></p>

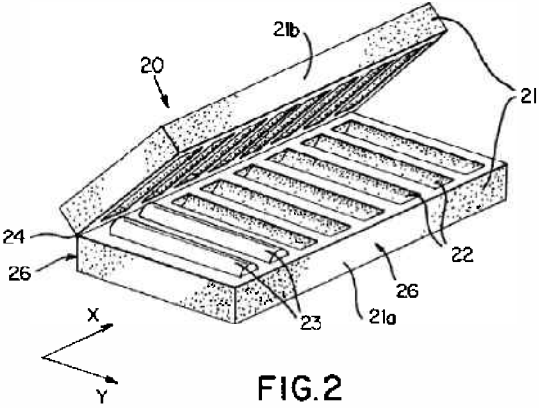
HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Hoffmann**

	<p>“Pursuant to a further specific embodiment of the present invention, a set of base members of different hardnesses, especially wear hardnesses, along with a palette of inserts of different degrees of hardness are proposed.” <i>Id.</i> at 2:53–55.</p> <p>“Depending upon specific needs, inserts [] having the same or different hardness are inserted” into the elongated cavities. <i>Id.</i> at 3:28–30.</p> <p>“A mattress or mattress core according to claim 1, wherein at least one of said inserts has elastic properties that are different from an elastic property of said base member.” <i>Id.</i> at 6:11–13.</p>
[1.2c] affixed within one of the plurality of channels,	<p>The inserts are “adapted to be placed into the cavities.” Hoffmann at Abstract. Upon placement of the inserts into the cavities, base member parts 21a and 21b are “connect[ed]” to support the “structural and inherent stability of the base member.” <i>Id.</i> at 2:40–44. As such, the inserts are affixed within the elongated cavities.</p>  <p>FIG. 2</p> <p><i>See also:</i></p> <p>“The present invention relates to a mattress or mattress core comprising a base member having cavities into which inserts can be placed.” <i>Id.</i> at 1:4–6.</p> <p>The “inserts are distributed into the elongated holes.” <i>Id.</i> at 2:45–47.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Hoffmann, it would be obvious to a person of ordinary skill in the art, as explained below.</p>

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'763 Patent Claim Chart: Hoffmann	
<p>[1.2d] each insert reinforcing the body.</p>	<p>“The inserts can be designed in a great variety of ways depending upon need or desire,” and Hoffmann teaches that the inserts have “different degrees of hardness” from the surrounding mattress. Hoffmann at 2:53–60. Hoffmann thus teaches that “inserts may be made from different materials, thus giving the inserts different mechanical characteristics,” “which are capable of reinforcing the body,” as the Examiner found. ’763 FH, 8/7/2006 Office Action.</p> <p>Indeed, Plaintiffs argued to the USPTO during prosecution of the ’173 patent that Hoffmann did not disclose an insert that “reinforces the body” (’173 FH, 4/29/2005 Amendment at 5), but the USPTO rejected that argument and found that “Hoffman discloses channels extending from the side surface [and] [i]nserts are provided which are <u>capable</u> [of] reinforcing the body.” ’173 FH, 7/11/2005 Office Action at 3 (emphasis in original). Plaintiffs did not dispute this characterization of Hoffmann.</p> <p><i>See also:</i></p> <p>“Pursuant to a further specific embodiment of the present invention, a set of base members of different hardnesses, especially wear hardnesses, along with a palette of inserts of different degrees of hardness are proposed.” <i>Id.</i> at 2:53–55.</p> <p>“Depending upon specific needs, inserts [] having the same or different hardness are inserted” into the elongated cavities. <i>Id.</i> at 3:28–30.</p> <p>“A mattress or mattress core according to claim 1, wherein at least one of said inserts has elastic properties that are different from an elastic property of said base member.” <i>Id.</i> at 6:11–13.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Hoffmann, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
<p>[4] The mattress of claim 1 further comprising</p>	<p><i>See Claim 1, above.</i></p>

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'763 Patent Claim Chart: Hoffmann	
[4.1a] a material that covers at least one of the channels,	<p>Hoffmann teaches that base member part 21a covers the elongated cavities—<i>i.e.</i>, channels—in base member part 21b, and vice versa, as depicted in Figure 2.</p>  <p style="text-align: center;">FIG. 2</p>
[4.1b] the material securing at least one of the inserts within one of the channels.	<p>The inserts are “adapted to be placed into the cavities.” Hoffmann at Abstract. Upon placement of the inserts into the cavities, base member parts 21a and 21b are “connect[ed]” to support the “structural and inherent stability of the base member.” <i>Id.</i> at 2:40–44. As such, base member parts 21a and 21b secure the inserts within the elongated cavities.</p>
[5] The mattress of claim 4 further comprising	<i>See</i> Claim 1, above.
[5.1] a mattress cover surrounding the mattress.	<p>Hoffmann teaches that “textile coverings” can be used to surround the mattress. Hoffmann at 2:20–23.</p> <p><i>See also:</i></p> <p>“The base member 11 is covered by a sleeve or cover 14 of wool, linen, cotton, mixed fibers, etc.” <i>Id.</i> at 3:11–13.</p> <p>“Any coverings that are present are removed, the base member is opened or lifted up, and the inserts are distributed into the elongated holes.” <i>Id.</i> at 2:45–47.</p>
[6] The mattress of claim 1, wherein	<i>See</i> Claim 1, above.
[6.1] at least one of the insert is substantially flush with the at least one of the top and	<p>Hoffmann teaches embodiments that “have not been specifically illustrated” where the inserts are “shallow” and “precisely disposed in correspondingly wide elongated holes.”</p>

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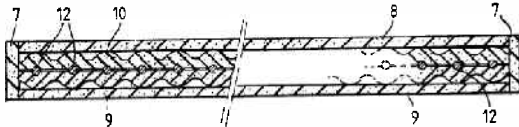
Claims, in light of the knowledge of a person of ordinary skill in the art. The idea of affixing inserts into channels was known in the art well before the Asserted Patents. *See generally supra* Section VIII. Indeed, the USPTO has found that affixing using adhesives or heat was an obvious matter of design choice. '935 FH, 10/17/2013 Office Action at 2; *see also* '935 FH, 4/9/2014 Office Action at 2; '620 FH, 9/11/2015 Office Action at 6. References such as Antinori disclose using adhesives to secure an insert in a channel. *See* Antinori at 4:22–27. It would have been obvious to a person of ordinary skill in the art to secure the inserts in Hoffmann using adhesives, or any other known method of affixing inserts. This would have led to predictable results, such as a higher quality mattress that would withstand repeated use.

2) It would have been obvious to modify Hoffmann to make each insert reinforce the body

116. To the extent Hoffmann is assumed not to expressly or inherently disclose “each insert reinforcing the body,” it would have been obvious to modify Hoffmann to combine it with that known element to yield the mattress claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. Hoffmann teaches a mattress with “at least two” cavities and corresponding inserts. Hoffmann at Abstract, 1:45–50. One potential configuration of inserts, which would be obvious to try to a person of ordinary skill in the art, would be to have both inserts of a firmness greater than the surrounding foam. This feature is taught in several prior art patents, including Regan, which discloses using firmer inserts in “the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight.” Regan at Abstract. A person of ordinary skill in the art would have a reasonable expectation of success in implementing Hoffmann in a similar manner. *See infra* Section VIII.E.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**d. Michiels Anticipates and/or Renders Obvious the Asserted Mattress Claims Under Plaintiffs' Incorrect Claim Interpretation**

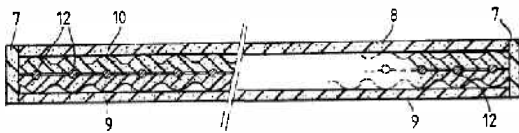
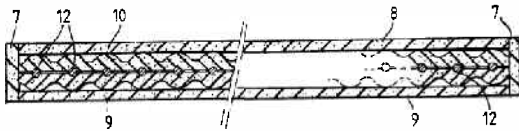
117. Michiels anticipates and/or renders obvious claims 1, 4, 5, 6, and 7 of the '763 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'763 Patent Claim Chart: Michiels	
[1] A mattress comprising:	"The present invention relates to mattresses and particularly to foam mattresses with improved elastic properties." Michiels at 1:7–8.
[1.1a] a body made of foam having a mechanical characteristic,	Under Plaintiffs' interpretation of the claims, Michiels discloses this element. ¹⁰ The Michiels mattress includes "elastomer layers 10 and 11," each of which are bodies made of foam under Plaintiffs' interpretation of that element. ¹¹ <i>See, e.g.</i> , Michiels at 2:33–63, 3:18–22.  <p style="text-align: center;">Fig.2.</p>
[1.1b] the body having a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces,	Elastomer layers 10 and 11 have a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces, as depicted in Figure 2.
[1.1c] at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom; and	The bottom surface of elastomer layer 10 and the top surface of elastomer layer 11 are "provided with cut-outs; these cut-outs being formed in flat faces of elastomer layers 10 and 11 and typically extending from one edge of the layer to the opposite edge." Michiels at 2:47–53. The "cut-outs" are channels— <i>i.e.</i> , "long, narrow grooves," as depicted in Figure 2. Although the walls of non-rectangular channels may not be perpendicular to the surface of the body in the figures, the channels themselves do extend perpendicularly into the layers.

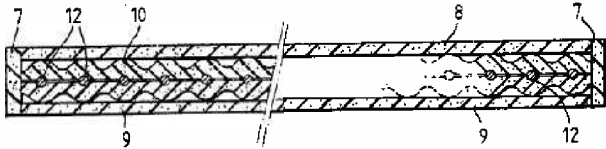
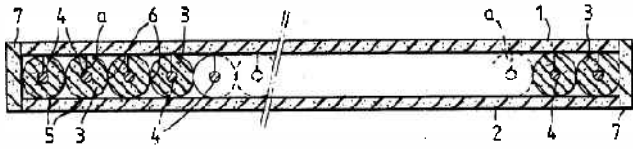
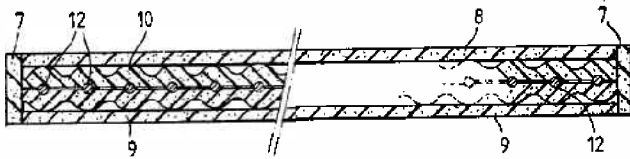
¹⁰ I disagree with Plaintiffs' assertion that a single layer of a multi-layer mattress, where all channels are on the internal surface of the mattress, is a "body." But, under the theory of infringement Plaintiffs assert against the Casper Wave, this claim limitation would be disclosed in Michiels.

¹¹ Figure 2 of Michiels only labels elastomer layer 10. A person of ordinary skill in the art would understand that the layer below elastomer layer 10 would be layer 11.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Michiels**

	 <p style="text-align: center;"><i>Fig. 2.</i></p> <p>To the extent this limitation is not expressly or inherently disclosed in Michiels, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[1.2a] a plurality of inserts,	<p>Michiels teaches that “stiffeners 12 are inserted in the through-holes defined by the above mentioned cut-outs.” Michiels at 2:55–56.; <i>see also id.</i> at 2:13–63.</p>  <p style="text-align: center;"><i>Fig. 2.</i></p>
[1.2b] each insert having a mechanical characteristic different from the mechanical characteristic of the foam and	<p>The “stiffeners 12 may, for example, comprise wooden rods which have some flexibility,” and thus have a mechanical characteristic different from the surrounding elastomer layer. Michiels at 2:57–59.</p>
[1.2c] affixed within one of the plurality of channels,	<p>The “stiffeners 12 are inserted in the through-holes defined by the above-mentioned cut-outs,” and together with the elastomer layers 10 and 11, are “adhesively secured” within the mattress. Michiels at 2:52–63.</p> <p><i>See also:</i></p> <p>“[T]he above description refers to affixing the various components to one another as required through the use of suitable adhesives.” <i>Id.</i> at 3:38–40.</p> <p>“The layers 10 and 11 are then secured to one another, for example through the use of a suitable adhesive, and the stiffeners 12 are inserted in the through-holes defined by the above mentioned cut-outs.” <i>Id.</i> at 2:52–57.</p>
[1.2d] each insert reinforcing the body.	<p>Because the “stiffeners 12” are designed to “stiffen” the surrounding mattress, the stiffeners 12 reinforce the body. Michiels at 2:57–59.</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Michiels**

[4] The mattress of claim 1 further comprising	See Claim 1, above.
[4.1a] a material that covers at least one of the channels,	<p>Elastomer layer 10 covers the “cut-outs” in layer 11, and vice versa, as depicted in Figure 2. Michiels at 2:47–53.</p>  <p style="text-align: center;">Fig. 2.</p>
[4.1b] the material securing at least one of the inserts within one of the channels.	<p>Elastomer layers 10 and 11 secures the stiffeners 12 within the cut-outs—i.e., channels—as depicted in Figure 2.</p> <p><i>See also:</i></p> <p>“When fabrication of the inner member comprising the layers 10 and 11 and stiffeners 12 has been completed, this inner member may easily be sandwiched between the outer layers 1 and 2 and, typically, adhesively secured to the outer layers.” Michiels at 2:59–63.</p>  <p style="text-align: center;">Fig. 1.</p>  <p style="text-align: center;">Fig. 2.</p>
[5] The mattress of claim 4 further comprising	See Claim 1, above.

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'763 Patent Claim Chart: Michiels	
[5.1] a mattress cover surrounding the mattress.	Michiels teaches that the mattress “will be fitted with a case or cover prior to being marketed.” Michiels at 3:3–4.
[6] The mattress of claim 1, wherein	<i>See</i> Claim 1, above.
[6.1] at least one of the insert is substantially flush with the at least one of the top and bottom surfaces.	To the extent this limitation is not expressly or inherently disclosed in Michiels, it would be obvious to a person of ordinary skill in the art, as explained below.
[7] The mattress of claim 1, wherein	<i>See</i> Claim 1, above.
[7.1] each channel extends to an opening in at least one of the surfaces adjacent to the channel surface.	The bottom surface of elastomer layer 10 and the top surface of elastomer layer 11 are “provided with cut-outs; these cut-outs being formed in flat faces of elastomer layers 10 and 11 and typically extending from one edge of the layer to the opposite edge.” Michiels at 2:47–53.

(i) Obviousness based on Michiels

118. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Michiels, the asserted mattress claims would have been obvious to a person of ordinary skill in the art in light of Michiels alone, as well as obvious over Michiels in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Michiels with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

1) It would have been obvious for at least one insert to be substantially flush with the top surface

119. To the extent Michiels is assumed not to expressly or inherently disclose that at least one of the inserts is substantially flush with the at least one of the top and bottom surfaces, it would have been obvious to modify Michiels to combine it with that known element to yield the mattress claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. One of the objectives of the inserts (stiffeners) is to reinforce the mattress and

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ensure that it does not permanently deform over time. One way of achieving this reinforcement would be to flatten the stiffener, as opposed to using a rod. This may achieve a firmer support profile in that area of the mattress, which would help achieve the objectives of Michiels. Additionally, this would result in fewer necessary cuts in one of the mattress layers, thus simplifying manufacture and reducing processing (*i.e.*, cutting) cost. Indeed, this was explicitly taught by numerous closely related references within precisely the same field of endeavor. *See, e.g.*, Kennaway at Fig. 4; GB '433 at Fig. 1; DE '214 at 3, Fig. 2; Regan at Fig. 5. It therefore would have been obvious to a person of ordinary skill in the art to make one of the inserts substantially flush with the top surface.

e. Lambert Anticipates and/or Renders Obvious the Asserted Mattress Claims Under Plaintiffs' Incorrect Claim Interpretation

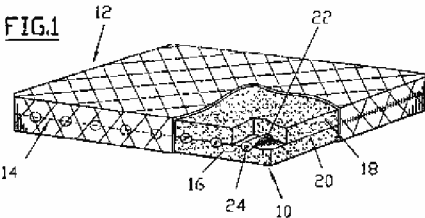
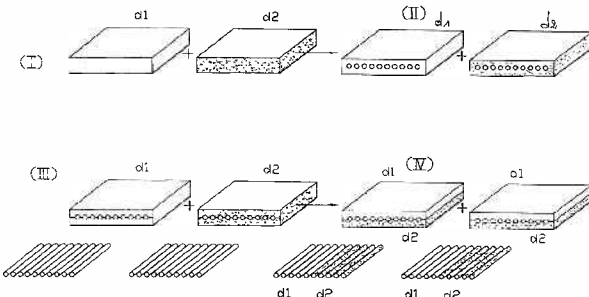
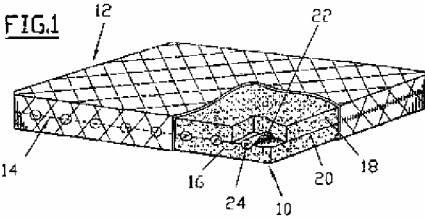
120. Lambert anticipates and/or renders obvious claims 1, 4, 5, 6, and 7 of the '763 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'763 Patent Claim Chart: Lambert	
[1] A mattress comprising:	<p>“The present invention has as its objective a mattress of which the comfort can be adjusted according to the personal preferences of the user.” Lambert at 1.</p> <p><i>See also:</i></p> <p>“The present invention proposes a foam rubber mattress of adjustable rigidity.” <i>Id.</i> at 2.</p>
[1.1a] a body made of foam having a mechanical characteristic,	<p>Under Plaintiffs' interpretation of the claims, Lambert discloses this element.¹² The mattress “consists of at least one block of foam rubber with sockets implemented in its thickness.” Lambert at 2. The “foam rubber block 10 comprises two half-blocks, lower 16 and upper 18,” as depicted in Figure 1, each of which is a “body made of foam” as Plaintiffs interpret that term. <i>Id.</i> at 3.</p>

¹² I disagree with Plaintiffs' assertion that a single layer of a multi-layer mattress, where all channels are on the internal surface of the mattress, is a “body.” But, under the theory of infringement Plaintiffs assert against the Casper Wave, this claim limitation would be disclosed in Lambert.

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’763 Patent Claim Chart: Lambert

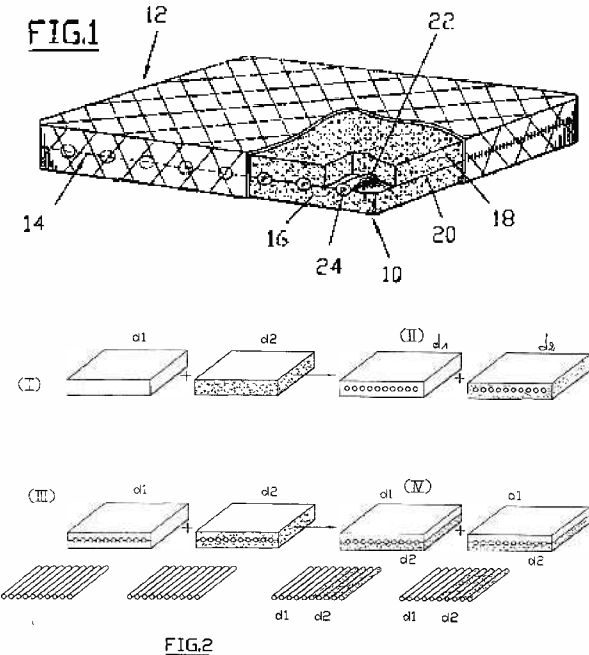
	
<p>[1.1b] the body having a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces,</p>	<p>Half-blocks 16 and 18 both have a top surface, a bottom surface, a first and second side surfaces and a first and second end surfaces, as depicted in Figures 1 and 2.</p> 
<p>[1.1c] at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom; and</p>	<p>The top surface of half-block 16 and the bottom surface of half-block 18 are “provided with” “transversal sockets 22” “made in [their] thickness by the cutting of elements identical to the profile required for the socket,” which extend perpendicularly into the body, as depicted in Figure 1. Although the walls of non-rectangular channels may not be perpendicular to the surface of the layer in Figure 1, the channels themselves do extend perpendicularly into the layer. The “transversal sockets 22” are “channels,” since they are “long, narrow grooves.” Lambert teaches that the cross-sections of the transversal sockets “can be shaped differently” than the circular sections depicted in Figures 1 and 2. Lambert at 6. Moreover, it would have been obvious to a person of skill in the to use other shapes for the cross-section, such as rectangular shapes.</p> 

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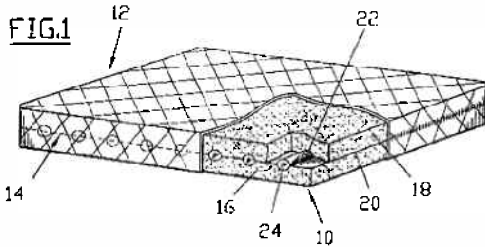
'763 Patent Claim Chart: Lambert	
[1.2a] a plurality of inserts,	Lambert teaches a plurality of “rigidifying elements 24,” which are “receive[d]” within the transversal sockets 22, as depicted in Figures 1 and 2. Lambert at cl. 1; <i>see also</i> Lambert at 2–4.
[1.2b] each insert having a mechanical characteristic different from the mechanical characteristic of the foam and	<p>The “rigidifying elements 24” are of “high[er] density” than the surrounding foam, and are used to “regulate the hardness according to the nature, the number, the positioning and profile of these rigidifying elements 24.” Lambert at claim 1.</p> <p><i>See also:</i></p> <p>“The introduction of the ‘d1’ or ‘d2’ elements into certain of the sockets allows the user to strengthen more or less any part of the mattress and ensure optimal support for his body according to his personal preference.” <i>Id.</i> at 6.</p>
[1.2c] affixed within one of the plurality of channels,	The “rigidifying elements 24” are “receive[d]” within the transversal sockets 22, as depicted in Figures 1 and 2. Lambert at cl. 1. Half-blocks 16 and 18 are “superimposed and linked one to the other,” securely affixing the “rigidifying elements” within the “transversal sockets 22.” <i>Id.</i> at 3.
[1.2d] each insert reinforcing the body.	<p>The “rigidifying elements 24” are of “high[er] density” than the surrounding foam, and are used to “regulate the hardness according to the nature, the number, the positioning and profile of these rigidifying elements 24.” Lambert at claim 1. The “rigidifying elements” thus reinforce the mattress body.</p> <p><i>See also:</i></p> <p>“The introduction of the ‘d1’ or ‘d2’ elements into certain of the sockets allows the user to strengthen more or less any part of the mattress and ensure optimal support for his body according to his personal preference.” <i>Id.</i> at 6.</p>
[4] The mattress of claim 1 further comprising	<i>See</i> Claim 1, above.
[4.1a] a material that covers at least one of the channels,	Half-block 16 covers the transverse cells in half-block 18, and vice versa, as depicted in Figures 1 and 2.

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’763 Patent Claim Chart: Lambert

	 <p>FIG. 1</p> <p>FIG. 2</p>
<p>[4.1b] the material securing at least one of the inserts within one of the channels.</p>	<p>The “rigidifying elements 24” are “receive[d]” within the transversal sockets 22, as depicted in Figures 1 and 2. Lambert at Claim 1. Half-blocks 16 and 18 are “superimposed and linked one to the other,” securing the “rigidifying elements” within the “transversal sockets 22.” <i>Id.</i> at 3.</p>
<p>[5] The mattress of claim 4 further comprising</p>	<p><i>See</i> Claim 1, above.</p>
<p>[5.1] a mattress cover surrounding the mattress.</p>	<p>“The block with its eventual rigidifying elements is covered by an exterior envelope over the total surface with means of easy access to the two lateral and longitudinal sides (zip closing for example).” Lambert at 4.</p>
<p>[6] The mattress of claim 1, wherein</p>	<p><i>See</i> Claim 1, above.</p>
<p>[6.1] at least one of the insert is substantially flush with the at least one of the top and bottom surfaces.</p>	<p>The top surface of half-block 16 and the bottom surface of half-block 18 are “provided with” “transversal sockets 22” “made in [their] thickness by the cutting of elements identical to the profile required for the socket,” which extend perpendicularly into the body, as depicted in Figure 1. Lambert at 3.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Lambert, it would be obvious to a person of ordinary skill in the art, as explained below.</p>

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'763 Patent Claim Chart: Lambert	
[7] The mattress of claim 1, wherein	See Claim 1, above.
[7.1] each channel extends to an opening in at least one of the surfaces adjacent to the channel surface.	<p>The “transversal sockets 22” extend to openings in the side surfaces of the mattress, as depicted in Figures 1 and 2.</p> 

(i) Obviousness based on Lambert

121. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Lambert, the asserted mattress claims would have been obvious to a person of ordinary skill in the art in light of Lambert alone, as well as obvious over Lambert in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Lambert with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

1) It would have been obvious for at least one insert to be substantially flush with the top surface

122. To the extent Lambert is assumed not to expressly or inherently disclose that at least one of the inserts is substantially flush with the at least one of the top and bottom surfaces, it would have been obvious to modify Lambert to combine it with that known element to yield the mattress claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. One of the objectives of the inserts (stiffeners) is to reinforce the mattress. One way of achieving this reinforcement would be to flatten the stiffener, as opposed to using a rod. This may achieve a firmer support profile in that area of the mattress, which would help achieve

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the objectives of Lambert. Additionally, this would result in fewer necessary cuts in one of the mattress layers, thus simplifying manufacture and reducing processing (*i.e.*, cutting) cost. Indeed, this was explicitly taught by numerous closely related references within precisely the same field of endeavor. *See, e.g.*, Kennaway at Fig. 4; GB '433 at Fig. 1; DE '214 at 3, Fig. 2; Regan at Fig. 5. It therefore would have been obvious to a person of ordinary skill in the art to make one of the inserts substantially flush with the top surface.

D. The Asserted Method Claims Are Invalid as Anticipated and Obvious

123. Plaintiffs assert five claims directed to a method of manufacturing a mattress: claims 8, 9, 11, and 12 of the '763 patent, claims 5, 6, and 8 of the '173 patent, and claims 10 and 13 of the '935 patent. Each of these claims is invalid as anticipated and obvious, under both the correct interpretation of the claims and under the strained interpretation of the claims Plaintiffs make to accuse the Casper Wave of infringing.

1. Invalidity of the Method Claims Under the Court's Constructions and/or Under Plaintiffs Incorrect Claim Interpretations

124. The following references anticipate and/or render obvious the asserted method claims under the correct interpretation of the claims and/or under Plaintiffs' incorrect claim interpretations.

a. Tarquinio Anticipates and/or Renders Obvious the Asserted Method Claims Under the Court's Constructions and/or Under Plaintiffs' Incorrect Claim Interpretations

125. Tarquinio anticipates and/or renders obvious claims 8, 9, 11, and 12 of the '763 patent under the Court's claim constructions and/or under Plaintiffs' incorrect claim interpretations, as shown below:

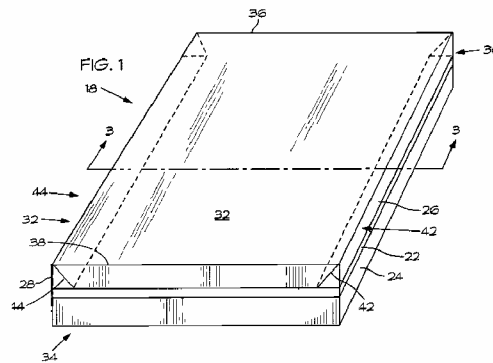
'763 Patent Claim Chart: Tarquinio	
[8] A method of manufacturing a mattress comprising:	Tarquinio teaches a "method for forming a mattress." Tarquinio at 5:7.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Tarquinio**

[8.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;

“The mattress includes a top layer [20], a bottom layer [24] and a buffer layer [22] between the top and bottom layers,” which are rectangular foam pieces shaped and sized for use as a mattress. Tarquinio at Abstract, 2:34–48. Although the top layer shown in Figure 1 has a generally trapezoidal shape, Tarquinio discloses alternate shapes of the top layer, many of which are generally rectangular in shape. *See id.* at Figs. 6–13.

The court construed “body” as “physical structure.” The three layers of the Tarquinio mattress, when combined together, comprise the body (*i.e.*, physical structure) of the mattress.



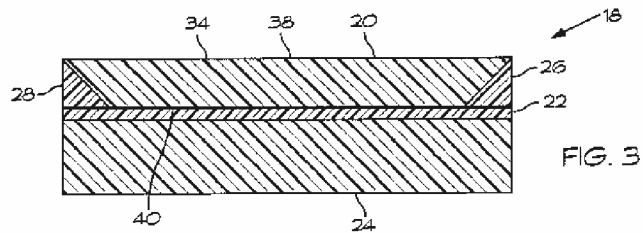
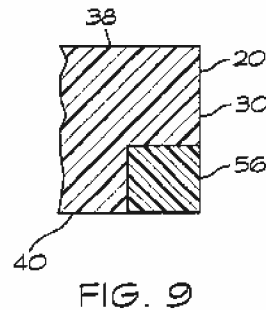
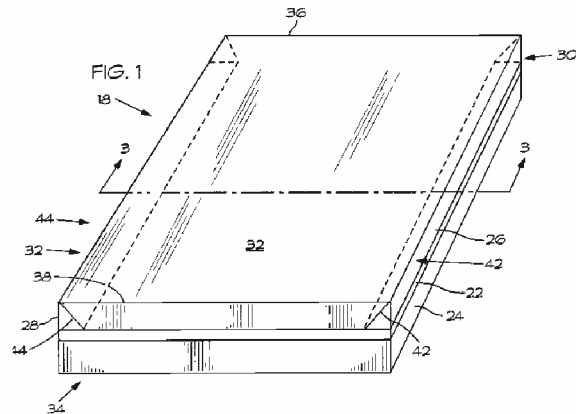
See also:

“[A] mattress according to the invention comprises a top layer formed to comprise a viscoelastic foam material having first indentation load deflection rating and an upper surface and a lower surface and first and second sides. The mattress further comprises a buffer layer adjacent the lower surface of the top layer. The buffer layer is formed to comprise a foam material having a second indentation load deflection rating that is greater than the first indentation load deflection rating. The mattress also comprises a bottom layer arranged such that the buffer layer is between the top and bottom layers.” *Id.* at 1:13–24.

“A mattress comprising a top layer formed to comprise a viscoelastic foam material . . . a buffer layer adjacent to the lower surface of the top layer, the buffer layer being formed to comprise a foam material . . . a bottom layer arranged such that the buffer layer is between the top and bottom layers, the bottom layer being formed to comprise a foam material.” *Id.* at 4:8–20.

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'763 Patent Claim Chart: Tarquinio	
<p>[8.2] locating a region of the body where increased support is desired;</p>	<p>Tarquinio teaches that the mattress “provides side support that reduces the likelihood that a person will accidentally roll off and also provides increased comfort to a person sitting on the side of the mattress.” Tarquinio at 1:11–14, 27–35, 3:22–31.</p> <p><i>See also:</i></p> <p>The mattress is designed to provide “reduced compression of the mattress when a weight is placed on the upper surface of the top layer near the support members.” <i>Id.</i> at 6:4–11.</p>
<p>[8.3] assembling the plurality of rectangular foam pieces to form the body having a channel in the region; and</p>	<p>Tarquinio discloses forming “elongate . . . cavities”—<i>i.e.</i>, channels—“between the first and second sides of the top layer and adjacent regions of the buffer layer.” Tarquinio at Abstract, 1:37–40. Tarquinio discloses that these cavities can be “wedge-shaped” or have “rectangular cross section.” <i>Id.</i> at 4:33–34, 51–53; <i>see also</i> Figs. 7, 9 & 12. The cavities (channels) are formed by “arrang[ing]”—<i>i.e.</i>, assembling—the layers of the mattress. <i>Id.</i> at 1:14–40.</p> <p>The court construed “channel” as “a long, narrow groove.” The “elongate cavities” (42, 44) along the sides of the mattress are long, narrow grooves. <i>See id.</i> at 1:37–43, 6:1–3.</p> <p>The court construed “assembling the plurality of rectangular foam pieces to form the body having a channel in the region” to mean “assembling the plurality of rectangular foam pieces to form the body and to form a channel in the region.” Because the elongate cavities (<i>i.e.</i>, channels) are formed when the layers of the mattress are arranged (<i>i.e.</i>, assembled), Tarquinio discloses this element. <i>See id.</i> at Abstract, 1:14–40 (“The top layer preferably is arranged to form first and second elongate wedge-shaped cavities between the first and second sides of the top layer and adjacent regions of the buffer layer.”).</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Tarquinio**

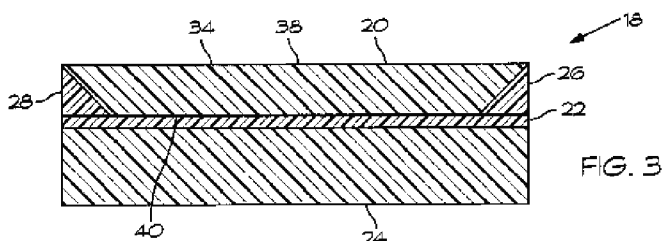
See also:

“In a preferred embodiment of the invention, the top layer has an upper surface 38 that has greater width than its lower surface 40 to form elongate wedge-shaped notches 42 and 44 between the top layer 20 and the intermediate layer 22.” *Id.* at 2:42–46.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Tarquinio**

[8.4] affixing an insert into the channel, the insert having a different firmness than the body of foam.

Tarquinio teaches that “first and second support members” 26 and 28 (*i.e.*, inserts), which are “high-resiliency foam structures,” are “positioned within the first and second cavities, respectively.” Tarquinio at 1:37–43. The support members “are firmer than the top layer.” *Id.* at 3:22–23. A person of ordinary skill in the art would understand that the support members would be held in place, at minimum, by friction. Indeed, unless the support members were secured in place, they would not perform their intended function.



See also:

“A pair of support members are placed in corresponding cavities near the opposite sides of the top layer.” *Id.* at Abstract.

“The mattress of claim 1 wherein the top layer is arranged to form first and second elongate wedge-shaped cavities between the first and second sides of the top layer and adjacent regions of the buffer layer and wherein the first and second support members comprise elongate wedge-shaped high resiliency foam structures positioned within the first and second cavities, respectively.” *Id.* at 4:32–38.

[9] The method of claim 8 wherein

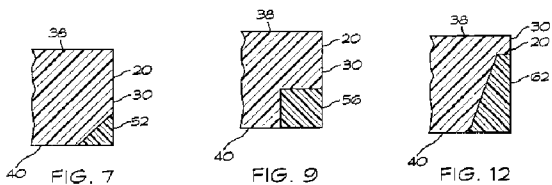
See Claim 8, above.

[9.1] forming the channel comprises cutting foam out of the body.

A person of ordinary skill in the art would understand that the shape of the top layer would be formed through cutting. For example, the only practical method to achieve the layer shapes show in, *e.g.*, Figures 7, 9, and 12 is cutting.

To the extent this limitation is not expressly or inherently disclosed in Tarquinio, it would be obvious to a person of ordinary skill in the art, as explained below.

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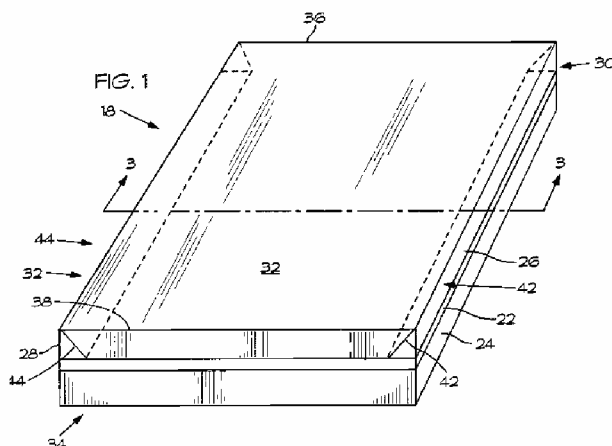
'763 Patent Claim Chart: Tarquinio	
[11] The method of claim 8 further comprising	See Claim 8, above.
[11.1] covering the mattress with one or more conventional mattress covering materials.	<p>A person of ordinary skill in the art would understand that a mattress such as the one disclosed in Tarquinio would have a conventional mattress cover placed around the body prior to use as a mattress.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Tarquinio, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[12] The method of claim 8 further comprising	See Claim 8, above.
[12.1] the size of the insert is substantially equal to the size of the channel.	<p>The “cavities”—<i>i.e.</i>, channels—have a physical shape corresponding to the physical shape of the “support members”—<i>i.e.</i>, inserts, and thus are configured to received them. Tarquinio at 6:4–11.</p> <p>Tarquinio teaches that the cavities, and inserts, can have a variety of corresponding physical shapes. <i>See, e.g.</i>, Figs. 7, 9 & 12.</p> <div style="text-align: center;">  </div>

126. Tarquinio anticipates and/or renders obvious claims 5, 6, and 8 of the '173 patent under the Court's claim constructions and/or under Plaintiffs' incorrect claim interpretations, as shown below:

'173 Patent Claim Chart: Tarquinio	
[5] A method of manufacturing a mattress comprising:	Tarquinio teaches a “method for forming a mattress.” Tarquinio at 5:7.
[5.1] providing a body made of foam shaped and sized for use as a mattress;	“The mattress includes a top layer [20], a bottom layer [24] and a buffer layer [22] between the top and bottom layers,” which are rectangular foam pieces shaped and sized for use as a mattress. Tarquinio at Abstract, 2:34–48.

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The court construed “body” as “physical structure.” The three layers of the Tarquinio mattress, when combined together, comprise the body (*i.e.*, physical structure) of the mattress.



See also:

“[A] mattress according to the invention comprises a top layer formed to comprise a viscoelastic foam material having first indentation load deflection rating and an upper surface and a lower surface and first and second sides. The mattress further comprises a buffer layer adjacent the lower surface of the top layer. The buffer layer is formed to comprise a foam material having a second indentation load deflection rating that is greater than the first indentation load deflection rating. The mattress also comprises a bottom layer arranged such that the buffer layer is between the top and bottom layers.” *Id.* at 1:13–24.

“A mattress comprising a top layer formed to comprise a viscoelastic foam material . . . a buffer layer adjacent to the lower surface of the top layer, the buffer layer being formed to comprise a foam material . . . a bottom layer arranged such that the buffer layer is between the top and bottom layers, the bottom layer being formed to comprise a foam material.” *Id.* at 4:8–20.

[5.2] locating a region of the body where increased support is desired;

Tarquinio teaches that the mattress “provides side support that reduces the likelihood that a person will accidentally roll off and also provides increased comfort to a person sitting on the side of the mattress.” Tarquinio at 1:11–14, 27–35, 3:22–31.

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'173 Patent Claim Chart: Tarquinio

See also:

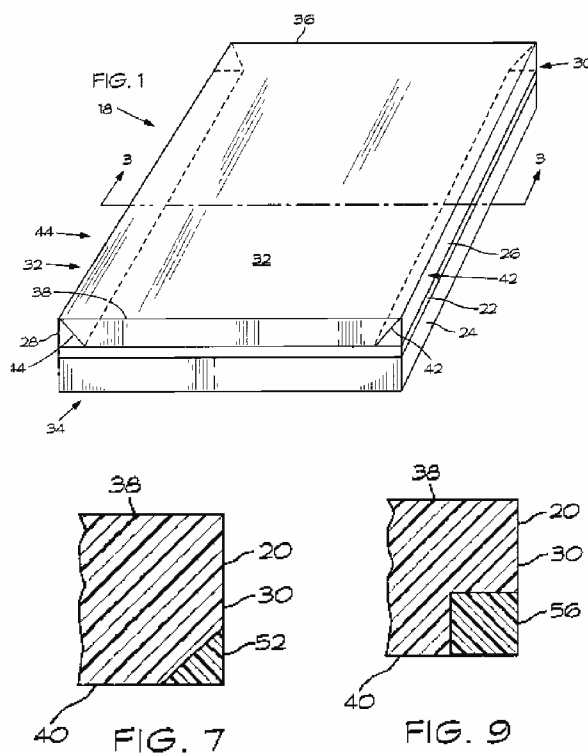
The mattress is designed to provide “reduced compression of the mattress when a weight is placed on the upper surface of the top layer near the support members.” *Id.* at 6:4–11.

[5.3] forming a channel into the body within the region; and

Tarquinio discloses channels in the form of two “corresponding cavities near the opposite sides of the top layer.” Tarquinio at Abstract. Tarquinio teaches that these cavities can be “wedge-shaped,” have “rectangular cross section,” or have any number of other shapes. *Id.* at 4:33–34, 51–53.

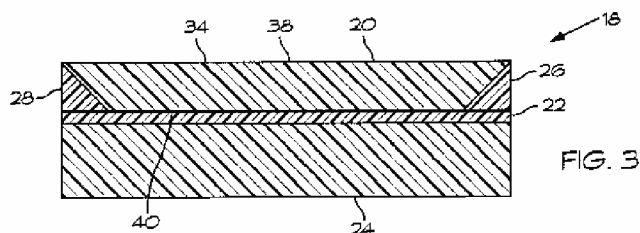
Tarquinio teaches that the cavities—*i.e.*, channels—are formed by assembling (“arranging”) the “top,” “bottom,” and “buffer” layers, which are rectangular foam pieces. Tarquinio at 1:14–40.

The court construed “channel” as “a long, narrow groove.” The “elongate cavities” along the sides of the mattress are long, narrow grooves. *See* Tarquinio at 1, 37–43, 6:1–3.



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'173 Patent Claim Chart: Tarquinio



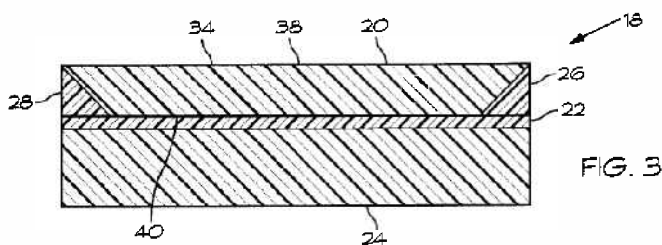
See also:

“The top layer preferably is arranged to form first and second elongated wedge-shaped cavities between the first and second sides of the top layer and adjacent regions of the buffer layer.” *Id.* at 1:37–40.

“In a preferred embodiment of the invention, the top layer has an upper surface 38 that has greater width than its lower surface 40 to form elongate wedge-shaped notches 42 and 44 between the top layer 20 and the intermediate layer 22.” *Id.* at 2:42–46.

[5.4a] affixing an insert into the channel

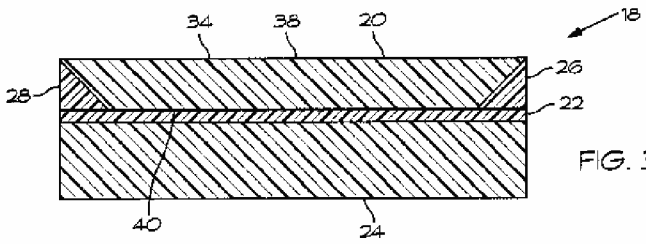
Tarquinio teaches that “first and second support members” 26 and 28 (*i.e.*, inserts) are “positioned within the first and second cavities, respectively.” Tarquinio at 1:37–43. A person of ordinary skill in the art would understand that the support members would be held in place, at minimum, by friction. Indeed, unless the support members were secured in place, they would not perform their intended function.



See also:

“A pair of support members are placed in corresponding cavities near the opposite sides of the top layer.” *Id.* at Abstract.

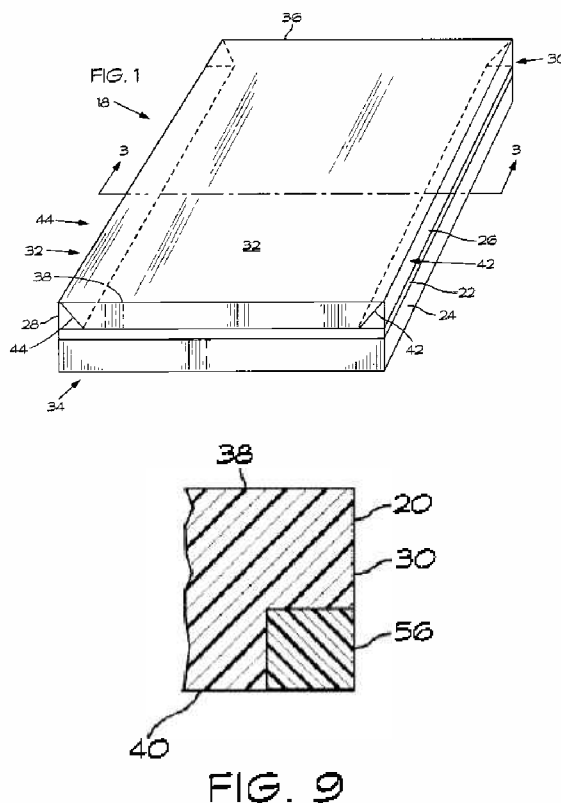
HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'173 Patent Claim Chart: Tarquinio**

	<p>“The mattress of claim 1 wherein the top layer is arranged to form first and second elongate wedge-shaped cavities between the first and second sides of the top layer and adjacent regions of the buffer layer and wherein the first and second support members comprise elongate wedge-shaped high resiliency foam structures positioned within the first and second cavities, respectively.” <i>Id.</i> at 4:32–38.</p>
<p>[5.4b] the insert having a greater firmness than the body of foam;</p>	<p>“The support members 26 and 28 preferably are formed of a very firm HR foam having a density of about 1.5 pounds per square foot . . . The support members 26 and 28 are firmer than the top layer.” Tarquinio at 3:13–18.</p> <p><i>See also:</i></p> <p>“The support members are firmer than the top layer and are arranged to support the top layer and provide reduced compression of the mattress when a weight is placed on the upper surface of the top layer near the support members.” <i>Id.</i> at Abstract.</p>
<p>[5.5] wherein forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel.</p>	<p>Tarquinio teaches that the cavities—<i>i.e.</i>, channels—are formed by assembling (“arrang[ing]”) the “top,” “bottom,” and “buffer” layers, which are rectangular foam pieces. Tarquinio at 1:14–40.</p>  <p><i>See also:</i></p> <p>“[A] mattress according to the invention comprises a top layer formed to comprise a viscoelastic foam material having first indentation load deflection rating and an upper surface and a lower surface and first and second sides. The mattress further comprises a buffer layer adjacent the lower surface of the top layer. The buffer layer is formed to comprise a foam material</p>

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'173 Patent Claim Chart: Tarquinio

having a second indentation load deflection rating that is greater than the first indentation load deflection rating. The mattress also comprises a bottom layer arranged such that the buffer layer is between the top and bottom layers The top layer preferably is arranged to form first and second wedge-shaped cavities between the first and second sides of the top layer and adjacent regions of the buffer layer.” *Id.* at 1:13–40.



“The mattress of claim 1 wherein the top layer is arranged to form first and second elongate wedge-shaped cavities between the first and second sides of the top layer and adjacent regions of the buffer layer.” *Id.* at 4:32–35.

[6] The method of claim 5

See Claim 5, above.

[6.1] wherein forming the channel further comprises cutting foam out of the body.

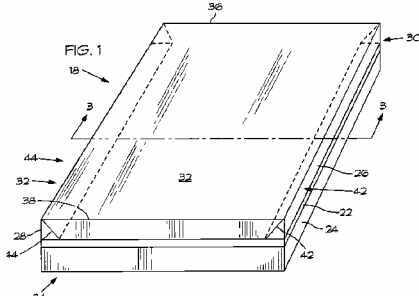
A person of ordinary skill in the art would understand that the shape of the top layer (seen in, *e.g.*, Figs. 6–13) would be formed through cutting. For example, the only practical method to achieve the shapes show in Figure 6–13 is cutting.

To the extent this limitation is not expressly or inherently disclosed in Tarquinio, it would be obvious to a person of ordinary skill in the art, as explained below.

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'173 Patent Claim Chart: Tarquinio	
[8] The method of claim 5 further comprising	See Claim 5, above.
[8.1] covering the mattress with one or more conventional mattress covering materials.	<p>A person of ordinary skill in the art would understand that a mattress such as the one disclosed in Tarquinio would have a conventional mattress cover placed around the body prior to use as a mattress.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Tarquinio, it would be obvious to a person of ordinary skill in the art, as explained below.</p>

127. Tarquinio anticipates and/or renders obvious claims 10 and 13 of the '935 patent under the Court's claim constructions and/or under Plaintiffs' incorrect claim interpretations, as shown below:

'935 Patent Claim Chart: Tarquinio	
[10] A method of manufacturing a mattress comprising:	Tarquinio teaches a "method for forming a mattress." Tarquinio at 5:7.
[10.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;	<p>"The mattress includes a top layer [20], a bottom layer [24] and a buffer layer [22] between the top and bottom layers," which are rectangular foam pieces shaped and sized for use as a mattress. Tarquinio at Abstract, 2:34–48. Although the top layer shown in Figure 1 has a generally trapezoidal shape, Tarquinio discloses alternate shapes of the top layer, many of which are generally rectangular in shape. <i>See id.</i> at Figs. 6–13.</p> <p>The court construed "body" as "physical structure." The three layers of the Tarquinio mattress, when combined together, comprise the body (<i>i.e.</i>, physical structure) of the mattress.</p> 

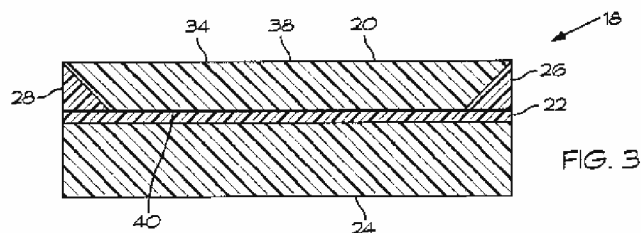
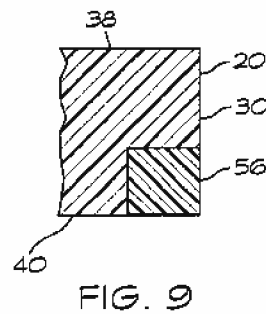
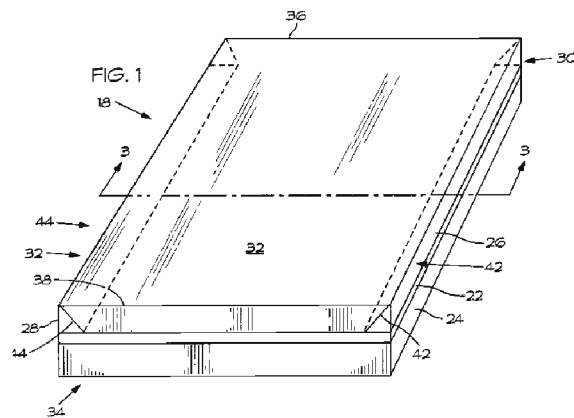
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'935 Patent Claim Chart: Tarquinio	
	<p><i>See also:</i></p> <p>“[A] mattress according to the invention comprises a top layer formed to comprise a viscoelastic foam material having first indentation load deflection rating and an upper surface and a lower surface and first and second sides. The mattress further comprises a buffer layer adjacent the lower surface of the top layer. The buffer layer is formed to comprise a foam material having a second indentation load deflection rating that is greater than the first indentation load deflection rating. The mattress also comprises a bottom layer arranged such that the buffer layer is between the top and bottom layers.” <i>Id.</i> at 1:13–24.</p> <p>“A mattress comprising a top layer formed to comprise a viscoelastic foam material . . . a buffer layer adjacent to the lower surface of the top layer, the buffer layer being formed to comprise a foam material . . . a bottom layer arranged such that the buffer layer is between the top and bottom layers, the bottom layer being formed to comprise a foam material.” <i>Id.</i> at 4:8–20.</p>
[10.2] locating a region of the body where increased support is desired;	<p>Tarquinio teaches that the mattress “provides side support that reduces the likelihood that a person will accidentally roll off and also provides increased comfort to a person sitting on the side of the mattress.” Tarquinio at 1:11–14, 27–35, 3:22–31.</p> <p><i>See also:</i></p> <p>The mattress is designed to provide “reduced compression of the mattress when a weight is placed on the upper surface of the top layer near the support members.” <i>Id.</i> at 6:4–11.</p>
[10.3] assembling the rectangular foam pieces to form the body having a channel in the region; and	<p>Tarquinio discloses forming “elongate . . . cavities”—<i>i.e.</i>, channels—“between the first and second sides of the top layer and adjacent regions of the buffer layer.” Tarquinio at Abstract, 1:37–40. Tarquinio discloses that these cavities can be “wedge-shaped” or have “rectangular cross section.” <i>Id.</i> at 4:33–34, 51–53. The cavities (channels) are formed by “arrang[ing]”—<i>i.e.</i>, assembling—the layers of the mattress. <i>Id.</i> at 1:14–40.</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'935 Patent Claim Chart: Tarquinio**

The court construed “channel” as “a long, narrow groove.” The “elongate cavities” (42, 44) along the sides of the mattress are long, narrow grooves. *See id.* at 1:37–43, 6:1–3.

The court construed “assembling the rectangular foam pieces to form the body having a channel in the region” to mean “assembling the rectangular foam pieces to form the body and to form a channel in the region.” Because the elongate cavities (*i.e.*, channels) are formed when the layers of the mattress are arranged (*i.e.*, assembled), Tarquinio discloses this element. *See id.* at Abstract, 1:14–40 (“The top layer preferably is arranged to form first and second elongate wedge-shaped cavities between the first and second sides of the top layer and adjacent regions of the buffer layer.”).



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'935 Patent Claim Chart: Tarquinio

See also:

“In a preferred embodiment of the invention, the top layer has an upper surface 38 that has greater width than its lower surface 40 to form elongate wedge-shaped notches 42 and 44 between the top layer 20 and the intermediate layer 22.” *Id.* at 2:42–46.

[10.4a] affixing at least one insert having planar top and bottom surfaces into the channel,

Tarquinio teaches that “first and second support members” 26 and 28 (*i.e.*, inserts) are “positioned within the first and second cavities, respectively.” Tarquinio at 1:37–43. A person of ordinary skill in the art would understand that the support members would be held in place, at minimum, by friction. Indeed, unless the support members were secured in place, they would not perform their intended function.

Tarquinio discloses that the inserts can be “wedge-shaped” or have “rectangular cross section”—*i.e.*, planar top and bottom surfaces. *Id.* at 4:33–34; 51–53.

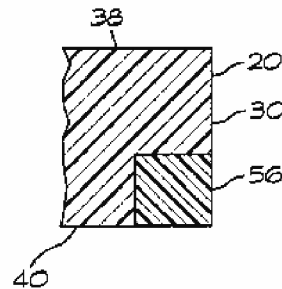


FIG. 9

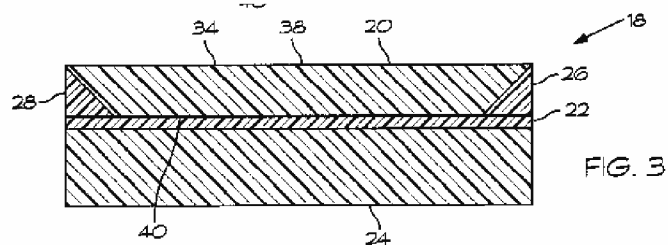


FIG. 3

See also:

“A pair of support members are placed in corresponding cavities near the opposite sides of the top layer.” *Id.* at Abstract.

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'935 Patent Claim Chart: Tarquinio	
	<p>“The mattress of claim 1 wherein the top layer is arranged to form first and second elongate wedge-shaped cavities between the first and second sides of the top layer and adjacent regions of the buffer layer and wherein the first and second support members comprise elongate wedge-shaped high resiliency foam structures positioned within the first and second cavities, respectively.” <i>Id.</i> at 4:32–38.</p>
<p>[10.4b] wherein the channel has a physical shape configured to receive the at least one insert,</p>	<p>The “cavities”—<i>i.e.</i>, channels—have a physical shape corresponding to the physical shape of the “support members”—<i>i.e.</i>, inserts, and thus are configured to received them. Tarquinio at 6:4–11.</p> <p>Tarquinio teaches that the cavities, and inserts, can have a variety of corresponding physical shapes. <i>See, e.g.</i>, Figs. 7, 9 & 12.</p> <div style="text-align: center;"> </div>
<p>[10.4c] the insert having a different mechanical property than the body of foam,</p>	<p>“The support members 26 and 28 preferably are formed of a very firm HR foam having a density of about 1.5 pounds per square foot . . . The support members 26 and 28 are firmer than the top layer.” Tarquinio at 3:13–18.</p> <p><i>See also:</i></p> <p>“The support members are firmer than the top layer and are arranged to support the top layer and provide reduced compression of the mattress when a weight is placed on the upper surface of the top layer near the support members.” <i>Id.</i> at Abstract.</p>
<p>[10.4d] and wherein the insert does not entirely fill the channel.</p>	<p>Tarquinio discloses inserts that both fill and do not entirely fill the channel. <i>See</i> Tarquinio at 3:62–4:43. For example, claim 1 of Tarquinio requires first and second “support members being firmer than the top layer and being arranged to support the top layer and provide reduced compression of the mattress.” <i>Id.</i> at 4:25–31. Dependent claim 5 then specifies that “the first and second support members comprise elongate high resiliency foam structures formed to fill the first and second cavities,</p>

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'935 Patent Claim Chart: Tarquinio	
	<p>respectively.” <i>Id.</i> at 4:55–57. In other words, because the dependent claim requires the support members to fill the cavities, a person of ordinary skill in the art would understand the independent claim to disclose support members that <i>do not</i> entirely fill the cavities (<i>i.e.</i>, channels).</p> <p>To the extent this limitation is not expressly or inherently disclosed in Tarquinio, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[13] The method of manufacturing a mattress of claim 10, wherein	<i>See</i> Claim 10, above.
[13.1] affixing at least one insert into the channel comprises applying adhesive, heat, or frictional restraint.	<p>As explained above, a person of ordinary skill in the art would understand that the support members would be held in place, at minimum, by friction. Indeed, unless the support members were secured in place, they would not perform their intended function.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Tarquinio, it would be obvious to a person of ordinary skill in the art, as explained below.</p>

(i) Obviousness based on Tarquinio

128. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Tarquinio, the asserted method claims would have been obvious to a person of ordinary skill in the art in light of Tarquinio alone, as well as obvious over Tarquinio in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Tarquinio with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

1) It would have been obvious to form the top layer of Tarquinio by cutting

129. To the extent Tarquinio is assumed not to expressly or inherently disclose that “forming the channel comprises cutting foam out of the body” as required by claim 9 of the

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'763 patent and claim 6 of the '173 patent,¹³ this would have been an obvious design choice to a person of ordinary skill in the art to achieve the claimed invention. Tarquinio is silent as to how the shape of the top layer is formed. As the USPTO has recognized, “[t]he method of forming the channels whether by cutting or molding is an obvious matter of design choice.” '173 FH, 7/31/2003 Office Action at 2; *see also* '763 FH, 8/7/2006 Office Action at 4. Indeed, most of the shapes shown in Figures 6–13 of Tarquinio could best be generated using cutting. Thus, it would be obvious to a person of ordinary skill in the art to use cutting to create the shape of the top layer in connection with assembling to form the channel, such that “forming the channel comprises cutting foam out of the body.”

2) It would have been obvious to cover the Tarquinio mattress with a conventional mattress cover

130. To the extent Tarquinio is assumed not to expressly or inherently disclose “covering the mattress with one or more conventional mattress covering materials” as required by claim 11 of the '763 patent and claim 8 of the '173 patent, this would have been an obvious step to a person of ordinary skill in the art to add in order to achieve the claimed invention. It is standard to cover a mattress core with a conventional mattress cover or other material prior to use as a mattress. A cover protects the mattress core from dirt and contamination which can increase the useful life of the mattress, often provides a flammability barrier, and offers an aesthetic, differentiating, and finished consumer product. Several references also raised in this case specifically describe the use of a mattress cover, including:

- Antinori at 4:39–43 (“durable cloth cover”);
- Kennaway at Abstract (“flexible cover”); and
- GB '433 at 3:5 (“cloth sleeve”).

¹³ Claim 6 of the '173 patent requires that “forming the channel further comprises cutting foam out of the body.”

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It would have been obvious to combine Tarquinio with any of these references, as they all relate to standard mattress design.

3) It would have been obvious to modify Tarquinio to have inserts that do not entirely fill the channel

131. To the extent Tarquinio is assumed not to expressly or inherently disclose that the “insert does not entirely fill the channel” as required by claim 10 of the ’935 patent, modifying the support members in Tarquinio so they do not entirely fill the cavities would be an obvious modification to a person of ordinary skill in the art to achieve the claimed invention.

132. For example, configuring an insert to not entirely fill a recess was taught in, *e.g.*, in DE 3937214 (DE ’214). As explained above, DE ’214 teaches not entirely filling a channel (either laterally or to its full depth) “in order to produce [a] desired resistance pattern.” DE ’214 at 8. Indeed, it was known by persons of ordinary skill in the art at the time that foam modification and convolution affects the feel of the mattress—referred to in the art as “surface modification.” Having the foam insert not fill the entire channel would be an obvious design option to selectively create the desired firmness profile along the edge of the mattress. It would have been obvious to combine the teachings of Tarquinio with DE ’214, as both relate to mattress design and both seek to provide selective firmness over the surface of a mattress.

133. Thus, it would have been obvious for the inserts in Tarquinio to not entirely fill the channel, as required by claim 10 of the ’935 patent.

4) It would have been obvious to modify Tarquinio to secure the inserts using adhesives, heat, or frictional restraint

134. To the extent Tarquinio is assumed not to expressly or inherently disclose “affixing at least one insert into the channel comprises applying adhesive, heat, or frictional restraint” as required by claim 13 of the ’935 patent, this would have been an obvious modification to a person of ordinary skill in the art to achieve the claimed invention. A person of

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ordinary skill in the art would understand that the support members of the Tarquinio mattress would not serve their desired purpose unless they were held in place. Methods of holding foam in place using adhesives, heat, or frictional restraint were well known in the art at the time of the Asserted Patents, as the USPTO has repeatedly found. *E.g.*, '935 FH, 10/17/2013 Office Action at 2 ("The use of adhesives or heat for affixing would have been obvious matter of design choice, since the use of adhesives or heat are well-known for connecting or affixing members together."); '935 FH, 4/9/2014 Office Action at 2; '620 FH, 9/11/2015 Office Action at 6.

135. Thus, it would have been obvious to achieve the claimed invention by securing the inserts in Tarquinio using adhesives, heat, or frictional restraint, as required by claim 13 of the '935 patent.

b. Scheuch Anticipates and/or Renders Obvious the Asserted Method Claims Under the Court's Constructions and/or Under Plaintiffs' Incorrect Claim Interpretations

136. Scheuch anticipates and/or renders obvious claims 8, 9, 11, and 12 of the '763 patent under the Court's claim constructions and/or under Plaintiffs' incorrect claim interpretations, as shown below:

'763 Patent Claim Chart: Scheuch	
[8] A method of manufacturing a mattress comprising:	<p>Scheuch describes the "manufacture" of a mattress. Scheuch at [0025].</p> <p><i>See also:</i></p> <p>"A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces." <i>Id.</i></p> <p>"Said structure . . . is favorable in terms of manufacturing." <i>Id.</i> at [0009].</p>

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'763 Patent Claim Chart: Scheuch

[8.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;

Scheuch describes providing a plurality of foam pieces (*i.e.*, cover layer 5, base layer 6, and webs 7, 8, and 9) that together form a body shaped and sized for use as a mattress. *Id.* at [0025].

Fig. 1

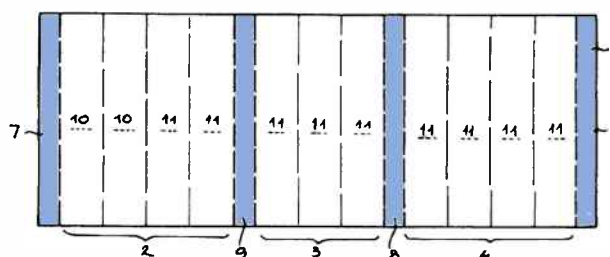
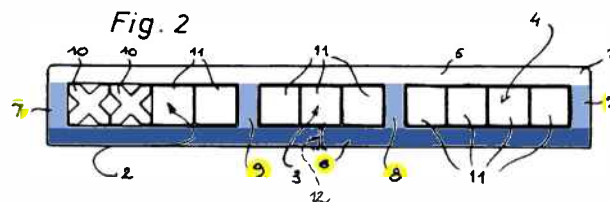


Fig. 2



See also:

“This is achieved by a mattress of the type described at the outset in that the inserts or insets extend over the entire width of the mattress and that the core, in particular the foam core, has a cover layer and a base layer as peripheral layers, which are kept at a distance from one another by webs, which are preferably glued in, wherein the hollow intermediate spaces form the recess or the recesses for the inserts.” *Id.* at [0009].

“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” *Id.* at [0025].

[8.2] locating a region of the body where increased support is desired;

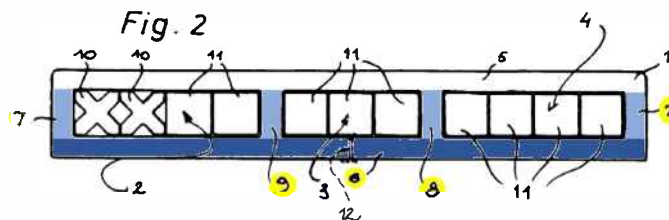
Scheuch teaches “adaptation of the hardness or elasticity” in various regions—*i.e.*, locating a region of the body where increased support is desired. Scheuch at [0006]. “The invention aims to further develop a mattress . . . [where] the individual adaptation of the mechanical properties can easily be carried out in a targeted manner for the individual regions of the body.” *Id.* at [0008].

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Scheuch**

	<p><i>See also:</i></p> <p>“The insets can have different levels of hardness; as a result, an individual adaptation of the hardness or elasticity in the head, shoulder, back and pelvic regions is possible, such as is the case for instance with orthopedic loungers because of medically shaped supports.” <i>Id.</i> at [0006].</p> <p>“A color code can be used to provide inserts for example in three degrees of hardness, which can be selectively introduced or inserted in accordance with an orthopedist’s recommendation for instance.” <i>Id.</i> at [0010].</p> <p>Scheuch teaches “locally changing the elastic properties of the mattress” based on desired areas of increased support. <i>Id.</i> at [0001].</p>
[8.3] assembling the plurality of rectangular foam pieces to form the body having a channel in the region; and	<p>Scheuch teaches assembling the rectangular foam pieces (<i>e.g.</i>, cover layer 5, base layer 6, and webs 7, 8, and 9) to form the body (<i>i.e.</i>, foam core 1) having a channel (<i>e.g.</i>, recess 3) in the region. Scheuch at [0025].</p> <p>The court construed “channel” as “a long, narrow groove.” The embodiment depicted in Figure 2 has three recesses. A person of ordinary skill in the art would understand Scheuch to teach that any number of recesses can be formed using additional webs. <i>See, e.g.</i>, Scheuch at cl. 1 (“one or more recesses”). A person of ordinary skill in the art could thus configure the mattress using the same manufacturing technique to have several long, narrow grooves.</p> <p>The court construed “assembling the plurality of rectangular foam pieces to form the body having a channel in the region” to mean “assembling the plurality of rectangular foam pieces to form the body and to form a channel in the region.” As explained above, Scheuch teaches forming channels in a region by assembling rectangular foam pieces.</p>

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'763 Patent Claim Chart: Scheuch



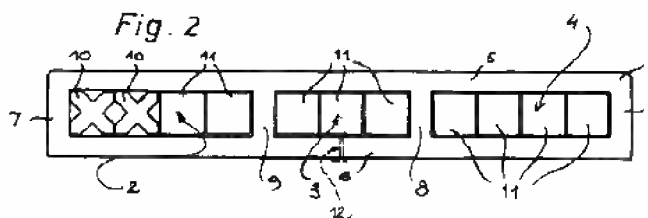
See also:

“A mattress having a core of elastic material, in particular a foam core (1) has, as viewed in a longitudinal section, continuous recesses (2, 3, 4) transverse to the lying direction, which are filled with replaceable inserts (10, 11) or inserts that are very close together, as the case may be, made of materials of different hardness and elasticity.” *Id.* at Abstract.

“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” *Id.* at [0025].

[8.4] affixing an insert into the channel, the insert having a different firmness than the body of foam.

Scheuch teaches affixing an insert (*e.g.*, insert 11) into the channel. Scheuch at [0025]. “[I]t is favorable if the position of the inserts or insets can be fixed in the recesses by Velcro pieces.” *Id.* at [0022].



See also:

“Mattress according to one of Claims 1 to 13, characterized in that the position of the inserts (10, 11, 13) or insets can be fixed in the recess or recesses (2,3,4) by Velcro pieces.” *Id.* at Claim 14.

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'763 Patent Claim Chart: Scheuch	
	<p>“A mattress having a core of elastic material, in particular a foam core (1) has, as viewed in a longitudinal section, continuous recesses (2,3,4) transverse to the lying direction, which are filled with replaceable inserts (10, 11) or inserts that are very close together, as the case may be, made of materials of different hardness and elasticity.” <i>Id.</i> at [Abstract].</p> <p>“The inserts can have different levels of hardness; as a result, an individual adaptation of the hardness or elasticity in the head, shoulder, back and pelvic regions is possible, such as is the case for instance with orthopedic loungers because of medically shaped supports.” <i>Id.</i> at [0006].</p> <p>“A color code can be used to provide inserts for example in three degrees of hardness, which can be selectively introduced or inserted in accordance with an orthopedist’s recommendation for instance.” <i>Id.</i> at [0010].</p> <p>“As a result, a standard mattress according to the invention offers a great many possibilities for varying the properties of the mattress. Of course, the inserts or insets can also be purchased subsequently in the desired degrees of hardness.” <i>Id.</i> at [0023].</p> <p>“Inserts 10, 11 in the form of cuboid, prismatic or similar blocks that are likewise produced from foam can be inserted from the side into said recesses 2, 3, 4. The inserts 10, 11 can have different mechanical properties (<i>e.g.</i>, hardness, elasticity). They can be individually removed and cleaned, and, by using a selective arrangement of inserts 10, 11 with different levels of hardness, it is possible to adjust the mattress correspondingly in terms of its entire length and width without intermediate spaces or even zone-by-zone to requirements or to subjective resting comfort.” <i>Id.</i> at [0025].</p>
[9] The method of claim 8 wherein	<i>See</i> Claim 8, above.
[9.1] forming the channel comprises cutting foam out of the body.	<p>Scheuch teaches that forming the channel further comprises cutting foam out of the body to form a “slot” on the top or bottom surface. Scheuch at Abstract, [0019].</p> <p><i>See also:</i></p>

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'763 Patent Claim Chart: Scheuch	
	<p>“Furthermore, the recesses (2, 3, 4) can have a slot towards the top or bottom, which extends at best over the entire width of the mattress.” [Abstract]</p> <p>“It is especially expedient if the cover layer and/or the base layer has an opening, in particular a slot for easier introduction or replacement of the inserts or insets. Lateral insertion is thereby facilitated, but an insertion from above is also possible.” <i>Id.</i> at [0019].</p> <p>To the extent this limitation is not expressly or inherently disclosed in Scheuch, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[11] The method of claim 8 further comprising	See Claim 8, above.
[11.1] covering the mattress with one or more conventional mattress covering materials.	<p>“After insertion or placement of the [inserts] the mattress is put into a coating.” Scheuch at [0019].</p> <p><i>See also:</i></p> <p>“Due to the cover layer, the joints between the inserts or insets are covered so that they are not experienced as unpleasant and moreover they are protected from soiling.” <i>Id.</i> at [0010].</p>
[12] The method of claim 8 further comprising	See Claim 8, above.
[12.1] the size of the insert is substantially equal to the size of the channel.	<p>Scheuch teaches affixing an insert (<i>e.g.</i>, insert 11), which is substantially equal to the size of the channel (<i>e.g.</i>, channel 4), into the channel. Scheuch at [0025]. “[I]t is favorable if the position of the inserts or insets can be fixed in the recesses by Velcro pieces.” <i>Id.</i> at [0022].</p> <p><i>Fig. 2</i></p> <p><i>See also:</i></p>

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'763 Patent Claim Chart: Scheuch	
	<p>“Mattress according to one of Claims 1 to 13, characterized in that the position of the inserts (10, 11, 13) or insets can be fixed in the recess or recesses (2,3,4) by Velcro pieces.” <i>Id.</i> at Claim 14.</p> <p>“Inserts 10, 11 in the form of cuboid, prismatic or similar blocks that are likewise produced from foam can be inserted from the side into said recesses 2, 3, 4. The inserts 10, 11 can have different mechanical properties (<i>e.g.</i>, hardness, elasticity). They can be individually removed and cleaned, and, by using a selective arrangement of inserts 10, 11 with different levels of hardness, it is possible to adjust the mattress correspondingly in terms of its entire length and width without intermediate spaces or even zone-by-zone to requirements or to subjective resting comfort.” <i>Id.</i></p> <p>“A mattress having a core of elastic material, in particular a foam core (1) has, as viewed in a longitudinal section, continuous recesses (2,3,4) transverse to the lying direction, which are filled with replaceable inserts (10, 11) or insets that are very close together, as the case may be, made of materials of different hardness and elasticity.” <i>Id.</i> at Abstract.</p>

137. Scheuch anticipates and/or renders obvious claims 5, 6, and 8 of the '173 patent under the Court's claim constructions and/or under Plaintiffs' incorrect claim interpretations, as shown below:

'173 Patent Claim Chart: Scheuch	
[5] A method of manufacturing a mattress comprising:	<p>Scheuch describes the “manufacture” of a mattress. Scheuch at [0009], [0025].</p> <p><i>See also:</i></p> <p>“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” <i>Id.</i></p> <p>“Said structure . . . is favorable in terms of manufacturing.” <i>Id.</i></p>

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'173 Patent Claim Chart: Scheuch

[5.1] providing a body made of foam shaped and sized for use as a mattress;

Scheuch describes providing a plurality of foam pieces (*i.e.*, cover layer 5, base layer 6, and webs 7, 8, and 9) that together form a body shaped and sized for use as a mattress. *Id.* at [0025].

Fig. 1

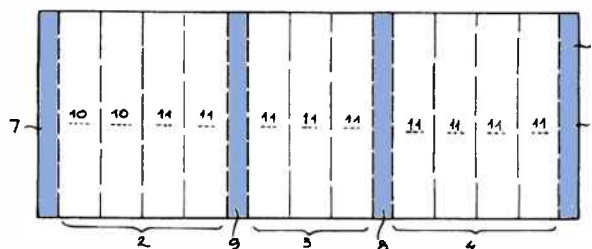
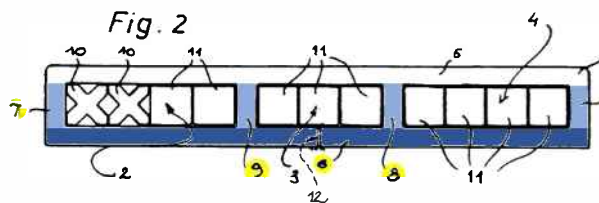


Fig. 2



See also:

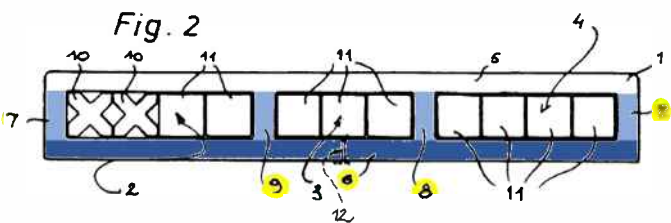
“This is achieved by a mattress of the type described at the outset in that the inserts or insets extend over the entire width of the mattress and that the core, in particular the foam core, has a cover layer and a base layer as peripheral layers, which are kept at a distance from one another by webs, which are preferably glued in, wherein the hollow intermediate spaces form the recess or the recesses for the inserts.” *Id.* at [0009].

“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” *Id.* at [0025].

[5.2] locating a region of the body where increased support is desired;

Scheuch teaches “adaptation of the hardness or elasticity” in various regions—*i.e.*, locating a region of the body where increased support is desired. Scheuch at [0006]. “The invention aims to further develop a mattress . . . [where] the individual adaptation of the mechanical properties can easily be carried out in a targeted manner for the individual regions of the body.” *Id.* at [0008].

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	<p><i>See also:</i></p> <p>“The insets can have different levels of hardness; as a result, an individual adaptation of the hardness or elasticity in the head, shoulder, back and pelvic regions is possible, such as is the case for instance with orthopedic loungers because of medically shaped supports.” <i>Id.</i> at [0006].</p> <p>“A color code can be used to provide inserts for example in three degrees of hardness, which can be selectively introduced or inserted in accordance with an orthopedist’s recommendation for instance.” <i>Id.</i> at [0010].</p> <p>Scheuch teaches “locally changing the elastic properties of the mattress” based on desired areas of increased support. <i>Id.</i> at [0001].</p>
<p>[5.3] forming a channel into the body within the region; and</p>	<p>Scheuch teaches forming a channel into the body within the region by gluing webs 7, 8, and 9 between foam cover layer 5 and base layer 6. Scheuch at [0025].</p> <p>The court construed “channel” as “a long, narrow groove.” The embodiment depicted in Figure 2 has three recesses. A person of ordinary skill in the art would understand Scheuch to teach that any number of recesses can be formed using additional webs. <i>See, e.g.</i>, Scheuch at cl. 1 (“one or more recesses”). A person of ordinary skill in the art could thus configure the mattress using the same manufacturing technique to have several long, narrow grooves.</p> <p>“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” <i>Id.</i></p> 

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	<p><i>See also:</i></p> <p>“A mattress having a core of elastic material, in particular a foam core (1) has, as viewed in a longitudinal section, continuous recesses (2, 3, 4) transverse to the lying direction, which are filled with replaceable inserts (10, 11) or inserts that are very close together, as the case may be, made of materials of different hardness and elasticity.” <i>Id.</i> at Abstract.</p>
<p>[5.4a] affixing an insert into the channel</p>	<p>Scheuch teaches affixing an insert (<i>e.g.</i>, insert 11) into the channel. Scheuch at [0025]. “[I]t is favorable if the position of the inserts or inserts can be fixed in the recesses by Velcro pieces.” <i>Id.</i> at [0022].</p> <div> </div> <p><i>See also:</i></p> <p>“Mattress according to one of Claims 1 to 13, characterized in that the position of the inserts (10, 11, 13) or inserts can be fixed in the recess or recesses (2,3,4) by Velcro pieces.” <i>Id.</i> at Claim 14.</p> <p>“A mattress having a core of elastic material, in particular a foam core (1) has, as viewed in a longitudinal section, continuous recesses (2,3,4) transverse to the lying direction, which are filled with replaceable inserts (10, 11) or inserts that are very close together, as the case may be, made of materials of different hardness and elasticity.” <i>Id.</i> at [Abstract].</p> <p>“The inserts can have different levels of hardness; as a result, an individual adaptation of the hardness or elasticity in the head, shoulder, back and pelvic regions is possible, such as is the case for instance with orthopedic loungers because of medically shaped supports.” <i>Id.</i> at [0006].</p>

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'173 Patent Claim Chart: Scheuch	
	<p>“A color code can be used to provide inserts for example in three degrees of hardness, which can be selectively introduced or inserted in accordance with an orthopedist’s recommendation for instance.” <i>Id.</i> at [0010].</p> <p>“As a result, a standard mattress according to the invention offers a great many possibilities for varying the properties of the mattress. Of course, the inserts or insets can also be purchased subsequently in the desired degrees of hardness.” <i>Id.</i> at [0023].</p> <p>“Inserts 10, 11 in the form of cuboid, prismatic or similar blocks that are likewise produced from foam can be inserted from the side into said recesses 2, 3, 4. The inserts 10, 11 can have different mechanical properties (<i>e.g.</i>, hardness, elasticity). They can be individually removed and cleaned, and, by using a selective arrangement of inserts 10, 11 with different levels of hardness, it is possible to adjust the mattress correspondingly in terms of its entire length and width without intermediate spaces or even zone-by-zone to requirements or to subjective resting comfort.” <i>Id.</i> at [0025].</p>
[5.4b] the insert having a greater firmness than the body of foam;	<p>Scheuch teaches that, because the inserts can have “different levels of hardness,” the insert has a greater firmness than the body of foam. Scheuch at [0025].</p> <p><i>See also:</i></p> <p>“The insets can have different levels of hardness; as a result, an individual adaptation of the hardness or elasticity in the head, shoulder, back and pelvic regions is possible, such as is the case for instance with orthopedic loungers because of medically shaped supports.” <i>Id.</i> at [0006].</p> <p>“A color code can be used to provide inserts for example in three degrees of hardness, which can be selectively introduced or inserted in accordance with an orthopedist’s recommendation for instance.” <i>Id.</i> at [0010].</p> <p>“As a result, a standard mattress according to the invention offers a great many possibilities for varying the properties of the mattress. Of course, the inserts or insets can also be purchased subsequently in the desired degrees of hardness.”</p>

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'173 Patent Claim Chart: Scheuch	
	<p><i>Id.</i> at [0023].</p> <p>“The inserts 10, 11 can have different mechanical properties (<i>e.g.</i>, hardness, elasticity). They can be individually removed and cleaned, and, by using a selective arrangement of inserts 10, 11 with different levels of hardness, it is possible to adjust the mattress correspondingly in terms of its entire length and width without intermediate spaces or even zone-by-zone to requirements or to subjective resting comfort.” <i>Id.</i> at [0025].</p>
<p>[5.5] wherein forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel.</p>	<p>Scheuch teaches that forming the channel comprises assembling a plurality of rectangular foam pieces (<i>e.g.</i>, cover layer 5, base layer 6, and webs 7, 8, and 9) into a mattress that includes the channel. Scheuch at [0025].</p> <p>Fig. 2</p> <p><i>See also:</i></p> <p>“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” [0025]</p>
<p>[6] The method of claim 5</p>	<p><i>See Claim 5, above.</i></p>
<p>[6.1] wherein forming the channel further comprises cutting foam out of the body.</p>	<p>Scheuch teaches that forming the channel further comprises cutting foam out of the body to form a “slot” on the top or bottom surface. Scheuch at Abstract, [0019].</p> <p><i>See also:</i></p> <p>“Furthermore, the recesses (2, 3, 4) can have a slot towards the top or bottom, which extends at best over the entire width of the mattress.” [Abstract]</p> <p>“It is especially expedient if the cover layer and/or the base layer has an opening, in particular a slot for easier introduction or replacement of the inserts or insets. Lateral insertion is thereby facilitated, but an insertion from above is also possible.” <i>Id.</i> at [0019].</p>

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'173 Patent Claim Chart: Scheuch	
	To the extent this limitation is not expressly or inherently disclosed in Scheuch, it would be obvious to a person of ordinary skill in the art, as explained below.
[8] The method of claim 5 further comprising	<i>See</i> Claim 5, above.
[8.1] covering the mattress with one or more conventional mattress covering materials.	<p>“After insertion or placement of the [inserts] the mattress is put into a coating.” Scheuch at [0019].</p> <p><i>See also:</i></p> <p>“Due to the cover layer, the joints between the inserts or insets are covered so that they are not experienced as unpleasant and moreover they are protected from soiling.” <i>Id.</i> at [0010].</p>

138. Scheuch anticipates and/or renders obvious claims 10 and 13 of the '935 patent under the Court's claim constructions and/or under Plaintiffs' incorrect claim interpretations, as shown below:

'935 Patent Claim Chart: Scheuch	
[10] A method of manufacturing a mattress comprising:	<p>Scheuch describes the “manufacture” of a mattress. Scheuch at [0025].</p> <p><i>See also:</i></p> <p>“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” <i>Id.</i></p> <p>“Said structure . . . is favorable in terms of manufacturing.” <i>Id.</i> at [0009].</p>
[10.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;	Scheuch describes providing a plurality of foam pieces (<i>i.e.</i> , cover layer 5, base layer 6, and webs 7, 8, and 9) that together form a body shaped and sized for use as a mattress. <i>Id.</i> at [0025].

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'935 Patent Claim Chart: Scheuch

Fig. 1

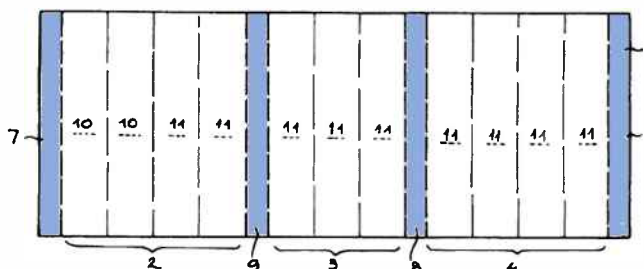
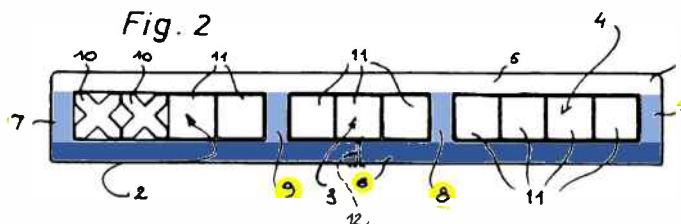


Fig. 2



See also:

“This is achieved by a mattress of the type described at the outset in that the inserts or insets extend over the entire width of the mattress and that the core, in particular the foam core, has a cover layer and a base layer as peripheral layers, which are kept at a distance from one another by webs, which are preferably glued in, wherein the hollow intermediate spaces form the recess or the recesses for the inserts.” *Id.* at [0009].

“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” *Id.* at [0025].

[10.2] locating a region of the body where increased support is desired;

Scheuch teaches “adaptation of the hardness or elasticity” in various regions—*i.e.*, locating a region of the body where increased support is desired. Scheuch at [0006]. “The invention aims to further develop a mattress . . . [where] the individual adaptation of the mechanical properties can easily be carried out in a targeted manner for the individual regions of the body.” *Id.* at [0008].

See also:

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	<p>“The insets can have different levels of hardness; as a result, an individual adaptation of the hardness or elasticity in the head, shoulder, back and pelvic regions is possible, such as is the case for instance with orthopedic loungers because of medically shaped supports.” <i>Id.</i> at [0006].</p> <p>“A color code can be used to provide inserts for example in three degrees of hardness, which can be selectively introduced or inserted in accordance with an orthopedist’s recommendation for instance.” <i>Id.</i> at [0010].</p> <p>Scheuch teaches “locally changing the elastic properties of the mattress” based on desired areas of increased support. <i>Id.</i> at [0001].</p>
[10.3] assembling the rectangular foam pieces to form the body having a channel in the region; and	<p>Scheuch teaches assembling the rectangular foam pieces (<i>e.g.</i>, cover layer 5, base layer 6, and webs 7, 8, and 9) to form the body (<i>i.e.</i>, foam core 1) having a channel (<i>e.g.</i>, recess 3) in the region. Scheuch at [0025].</p> <p>The court construed “channel” as “a long, narrow groove.” The embodiment depicted in Figure 2 has three recesses. A person of ordinary skill in the art would understand Scheuch to teach that any number of recesses can be formed using additional webs. <i>See, e.g.</i>, Scheuch at cl. 1 (“one or more recesses”). A person of ordinary skill in the art could thus configure the mattress using the same manufacturing technique to have several long, narrow grooves.</p> <p>The court construed “assembling the rectangular foam pieces to form the body having a channel in the region” to mean “assembling the rectangular foam pieces to form the body and to form a channel in the region.” As explained above, Scheuch teaches forming channels in a region by assembling rectangular foam pieces.</p> <p>Fig. 2</p>

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'935 Patent Claim Chart: Scheuch

See also:

“A mattress having a core of elastic material, in particular a foam core (1) has, as viewed in a longitudinal section, continuous recesses (2, 3, 4) transverse to the lying direction, which are filled with replaceable inserts (10, 11) or inserts that are very close together, as the case may be, made of materials of different hardness and elasticity.” *Id.* at Abstract.

“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” *Id.* at [0025].

[10.4a] affixing at least one insert having planar top and bottom surfaces into the channel,

Scheuch teaches affixing at least one insert having planar top and bottom surfaces (e.g., insert 10 or 11) into the channel. Scheuch at [0025].

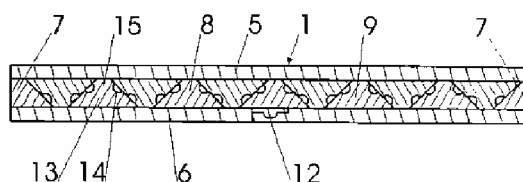
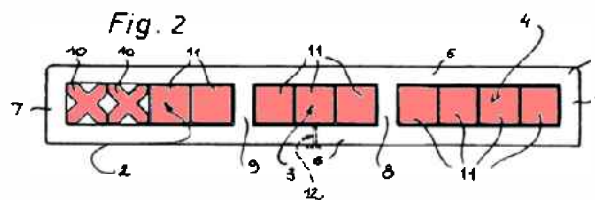


Fig. 4

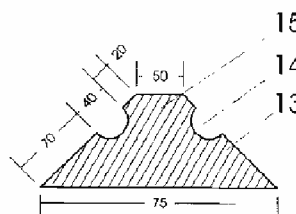


Fig. 5

See also:

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'935 Patent Claim Chart: Scheuch	
	<p>“A preferred embodiment is characterized in that the inserts or insets have a cross-section corresponding to a substantially equilateral triangle or a substantially equilateral trapezoid and the inserts or insets are inserted in the recess or the recesses each rotated around the longitudinal axis by 180°, and that the webs are adapted to the cross-sectional shape of the inserts or insets via oblique surfaces.” <i>Id.</i> at [0014].</p> <p>“Inserts 10, 11 in the form of cuboid, prismatic or similar blocks that are likewise produced from foam can be inserted from the side into said recesses 2, 3, 4. The inserts 10, 11 can have different mechanical properties (e.g., hardness, elasticity). They can be individually removed and cleaned, and, by using a selective arrangement of inserts 10, 11 with different levels of hardness, it is possible to adjust the mattress correspondingly in terms of its entire length and width without intermediate spaces or even zone-by-zone to requirements or to subjective resting comfort.” <i>Id.</i> at [0025].</p>
[10.4b] wherein the channel has a physical shape configured to receive the at least one insert,	<p>The “recess”—<i>i.e.</i>, channel—is designed “for the inserts,” and thus has a physical shape configured to receive the at least one insert. Scheuch at [0009].</p> <p><i>See also:</i></p> <p>“This is achieved by a mattress of the type described at the outset in that the inserts or insets extend over the entire width of the mattress and that the core, in particular the foam core, has a cover layer and a base layer as peripheral layers, which are kept at a distance from one another by webs, which are preferably glued in, wherein the hollow intermediate spaces form the recess or the recesses for the inserts.” <i>Id.</i> at [0009].</p> <p>“A mattress having a core of elastic material, in particular a foam core (1) has, as viewed in a longitudinal section, continuous recesses (2, 3, 4) transverse to the lying direction, which are filled with replaceable inserts (10, 11).” <i>Id.</i> at [Abstract]; <i>see also id.</i> at [0025].</p> <p>“A foam core 1 has recesses 2, 3, 4, which are produced by forming operations during the manufacture of the core or from a structure made of a foam cover layer 5, a base layer 6 and by webs 7, 8, 9 that are glued in as intermediate spaces.” <i>Id.</i></p>

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'935 Patent Claim Chart: Scheuch	
<p>[10.4c] the insert having a different mechanical property than the body of foam,</p>	<p>Scheuch teaches that, because the inserts “can have different mechanical properties (e.g., hardness, elasticity)” than the body of foam. Scheuch at [0025].</p> <p><i>See also:</i></p> <p>The inserts are made from “materials of different hardness and elasticity” than the foam body. <i>Id.</i> at [Abstract].</p> <p>The “insert made of foam material” has “special mechanical properties.” <i>Id.</i> at [0012].</p> <p>“The insets can have different levels of hardness; as a result, an individual adaptation of the hardness or elasticity in the head, shoulder, back and pelvic regions is possible, such as is the case for instance with orthopedic loungers because of medically shaped supports.” <i>Id.</i> at [0006].</p> <p>“A color code can be used to provide inserts for example in three degrees of hardness, which can be selectively introduced or inserted in accordance with an orthopedist’s recommendation for instance.” <i>Id.</i> at [0010].</p> <p>“As a result, a standard mattress according to the invention offers a great many possibilities for varying the properties of the mattress. Of course, the inserts or insets can also be purchased subsequently in the desired degrees of hardness.” <i>Id.</i> at [0023].</p> <p>“The inserts 10, 11 can have different mechanical properties (e.g., hardness, elasticity). They can be individually removed and cleaned, and, by using a selective arrangement of inserts 10, 11 with different levels of hardness, it is possible to adjust the mattress correspondingly in terms of its entire length and width without intermediate spaces or even zone-by-zone to requirements or to subjective resting comfort.” <i>Id.</i> at [0025].</p>
<p>[10.4d] and wherein the insert does not entirely fill the channel.</p>	<p>Scheuch teaches that the inserts do not entirely fill the channel. For example, inserts 10 do not fill the whole depth of the channel in the middle. Scheuch at [0012].</p>

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'935 Patent Claim Chart: Scheuch

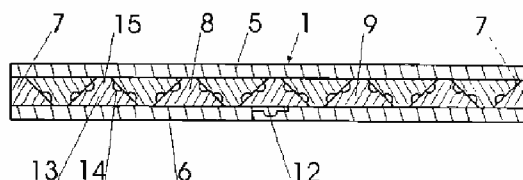
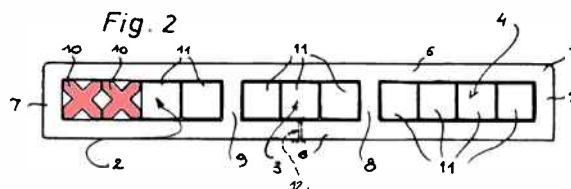


Fig. 4

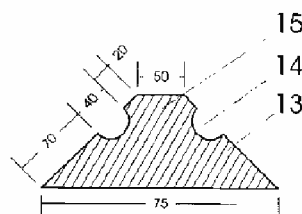


Fig. 5

See also:

“It is advantageous if at least some insert or insets are configured to be X-shaped within a rectangular or cuboid outline. The X-shape of the cross-section gives the insert made of foam material special mechanical properties.” *Id.* at [0012].

“A preferred embodiment is characterized in that the inserts or insets have a cross-section corresponding to a substantially equilateral triangle or a substantially equilateral trapezoid” *Id.* at [0014].

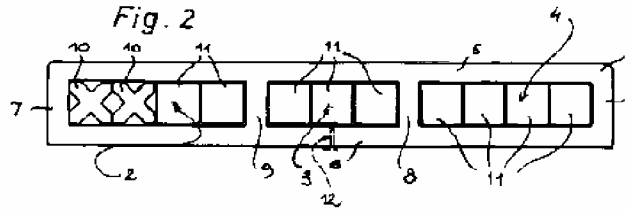
“Finally, it is favorable if the position of the inserts or insets can be fixed in the recesses by Velcro pieces.” *Id.* at [0022].

[13] The method of manufacturing a mattress of claim 10, wherein

See Claim 10, above.

[13.1] affixing at least one insert into the channel comprises applying adhesive, heat, or frictional restraint.

Scheuch teaches affixing an insert (*e.g.*, insert 11) into the channel through the use of mechanical frictional restraint. Scheuch at [0025]. “[I]t is favorable if the position of the inserts or insets can be fixed in the recesses by Velcro pieces.” *Id.* at [0022].

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See also:

“Mattress according to one of Claims 1 to 13, characterized in that the position of the inserts (10, 11, 13) or inserts can be fixed in the recess or recesses (2,3,4) by Velcro pieces.” *Id.* at Claim 14.

“Inserts 10, 11 in the form of cuboid, prismatic or similar blocks that are likewise produced from foam can be inserted from the side into said recesses 2, 3, 4. The inserts 10, 11 can have different mechanical properties (*e.g.*, hardness, elasticity). They can be individually removed and cleaned, and, by using a selective arrangement of inserts 10, 11 with different levels of hardness, it is possible to adjust the mattress correspondingly in terms of its entire length and width without intermediate spaces or even zone-by-zone to requirements or to subjective resting comfort.” *Id.*

“A mattress having a core of elastic material, in particular a foam core (1) has, as viewed in a longitudinal section, continuous recesses (2,3,4) transverse to the lying direction, which are filled with replaceable inserts (10, 11) or insets that are very close together, as the case may be, made of materials of different hardness and elasticity.” *Id.* at Abstract.

(i) Rebuttal to Plaintiffs’ preliminary injunction arguments

139. In Plaintiffs’ reply brief in support of their Motion for a Preliminary Injunction, Plaintiffs argued that Scheuch did not disclose two limitations: (1) a “channel” formed “into the body [made of foam]”; and (2) inserts “affixed” within the channels. *See* D.I. 51 at 23–24. Both assertions are incorrect.

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140. Plaintiffs first argued that the “recesses” disclosed in Scheuch are not “channels,” but rather large hollow voids occupying significant portions of the total volume of the mattress.” D.I. 51 at 23. But, as explained above, Scheuch discloses to a person of ordinary skill in the art that any number of vertical webs can be added, thus creating several long, narrow grooves. *See, e.g.,* Scheuch at cl. 1 (“one or more recesses”). Plaintiffs are also incorrect that these channels are not formed “into” the body. To the contrary, the channels, once formed, extend into the body from the sides.

141. Plaintiffs also incorrectly argue that the inserts are not “affixed” in the recesses in Scheuch. D.I. 51 at 24. To the contrary, Scheuch discloses affixing the inserts in the recess by Velcro pieces. *Id.* at [0022], Claim 14. Scheuch also discloses the mattress being placed “into a coating,” which would further secure the inserts in the channels. *Id.* at [0019].

(ii) Obviousness based on Scheuch

142. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Scheuch, the asserted method claims would have been obvious to a person of ordinary skill in the art in light of Scheuch alone, as well as obvious over Scheuch in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Scheuch with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

1) It would have been obvious to cut foam out of the body in Scheuch

143. To the extent Scheuch is assumed not to expressly or inherently disclose using cutting in addition to assembly of rectangular blocks to form channels, it would have been obvious to modify Scheuch to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. One of

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the known methods at the time of forming channels/recesses was cutting. It would have been obvious to a person of ordinary skill in the art to cut foam out of the body during manufacture. For example, Scheuch describes a “slot” in the cover layer and/or base layer. Scheuch at Abstract ¶ [0027]. It would have been obvious to a person of ordinary skill in the art to assemble the cover layer, base layer, and webs, and then to use cutting to form a slot in either the cover layer or base layer. It also would have been obvious for a person of ordinary skill in the art to form the main cavity by cutting and then to glue in intermediate webs. For instance, the head and foot webs, with the base, would be formed by cutting and the intermediate webs glued to the base as needed.

144. Indeed, during prosecution of the '173 patent, the examiner rejected certain claims as obvious because “[t]he method of forming the channels whether by cutting or molding is an obvious matter of design choice.” '173 FH, 7/31/2003 Office Action at 2. Plaintiffs never disputed the examiner’s characterization of using cutting as “an obvious matter of design choice.” It therefore would have been obvious to a person of ordinary skill in the art to manufacture the mattress described in Scheuch by using cutting, in part.

2) It would have been obvious for the insert to not entirely fill the channel in Scheuch

145. To the extent Scheuch is assumed not to expressly or inherently disclose that the “insert does not entirely fill the channel” as required by claim 10 of the '935 patent, it would have been obvious to modify Scheuch to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. A person of ordinary skill in the art at the time would have known that filling the channels to different depths could affect the support and resiliency of the inserts. A person of ordinary skill in the art would experiment with filling the channels to different depths in order to maximize comfort and support.

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146. Configuring the insert to not entirely fill the recess was taught in, *e.g.*, in DE 3937214 (DE '214). DE '214, titled “Therapeutic mattress for patients,” was filed on November 8, 1989, and was published on May 16, 1991. As seen below in Figure 1, DE '214 teaches forming channels that pass through the center of the mattress. The channels receive inserts of varying elasticity to “form[] a pattern with locally different resistance values for the person reclining thereon.” DE '214 at cl. 1. As seen in Figures 3 and 12, DE '214 teaches that it can be beneficial to provide “a substantially lower resistance value” by not entirely filling a channel, either along its width (Figure 3) or to its full depth (Figure 12). *See id.* at 6–8. DE '214 explains that channels “can be filled completely or even only partially . . . in order to produce the respective desired resistance pattern 17 on the reclining surface of the mattress part 19.” *Id.* at 8. It would have been obvious to combine the teachings of Scheuch with DE '214, as both relate to mattress design and both seek to provide selective firmness over the surface of a mattress.

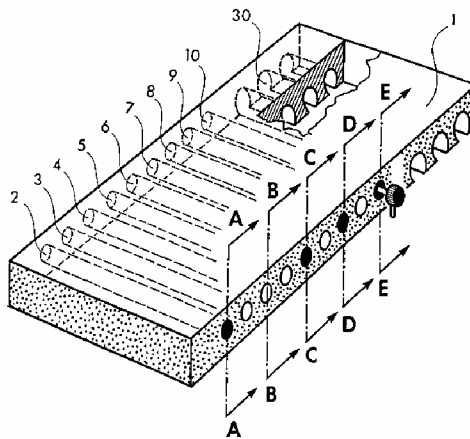


Fig.1



Fig.3 Schnitt B-B

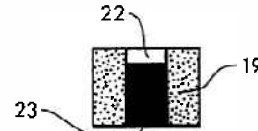


Fig.12 Schnitt G-G

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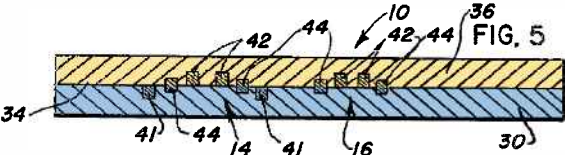
147. Thus, it would have been obvious in light of Scheuch itself, as well as when Scheuch is considered with DE '214, to achieve the claimed invention in which the insert does not entirely fill the channel, as required by claim 10 of the '935 patent.

2. Invalidity of the Method Claims Under Plaintiffs' Incorrect Claim Interpretation

148. In addition to the references above, the following references also anticipate and/or render obvious the asserted method claims under Plaintiffs' incorrect interpretation of the claims.

a. Regan Anticipates and/or Renders Obvious the Asserted Method Claims Under Plaintiffs' Incorrect Claim Interpretation

149. Regan anticipates and/or renders obvious claims 8, 9, 11, and 12 of the '763 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'763 Patent Claim Chart: Regan	
<p>[8] A method of manufacturing a mattress comprising:</p>	<p>Regan describes “[a] method of manufacturing a mattress according to the invention.” Regan at 3:5–8.</p> <p><i>See also:</i></p> <p>“A method of manufacturing a mattress according to the invention is to join two similar or dissimilar layers of resilient material, as by an adhesive, with at least two sets of less compressible ribs disposed therebetween.” <i>Id.</i> at 3:5–9.</p>
<p>[8.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;</p>	<p>The method involves providing a body “of a resilient material, such as molded foam,” and “may be fabricated from two similar or dissimilar layers,” such as lower layer 30 (blue) and upper layer 36 (yellow). Regan at 2:17–22.</p>  <p><i>See also:</i></p>

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'763 Patent Claim Chart: Regan	
	<p>“FIG. 1 illustrates a mattress, generally designated 10, embodying the present invention. The mattress 10 is illustrated as a single layer 11 of a resilient material, such as molded foam, but it is to be understood that the mattress 10 may be fabricated from two similar or dissimilar layers, as described below.” <i>Id.</i> at 2:17–22.</p> <p>“The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30.” <i>Id.</i> at 3:9–15.</p>
[8.2] locating a region of the body where increased support is desired;	<p>The Regan mattress targets “the areas of greatest body weight,” such as “the shoulder or buttocks area.” Regan at 1:31–36, 2:58–61.</p> <p><i>See also:</i></p> <p>“The sets are spaced apart longitudinally to correspond in position to the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight, and hold the body generally straight.” <i>Id.</i> at Abstract.</p> <p>“Each set 14 and 16 is positioned within the mattress 10 to correspond to the areas of greatest weight of a user (not shown) lying on the top surface 12. In FIG. 1, if the head of the user is closest to the end 22 of the mattress 10, the set 14 corresponds to the shoulder area of the user and the set 16 corresponds to the area of the user's buttocks. A sufficient number of ribs 20 is provided in each set 14 and 16 to provide a sufficiently wide support area. Although only two sets of ribs are shown in FIG. 1, it is to be understood that additional ribs may be provided for the calf area, the head area, etc.” <i>Id.</i> at 2:35–46.</p>
[8.3] assembling the plurality of rectangular foam pieces to form the body having a channel in the region; and	<p>Under Plaintiffs’ interpretation of the claims, Regan discloses this element. Under Plaintiffs’ incorrect interpretation of the claims, Regan teaches assembling the rectangular foam pieces (<i>i.e.</i>, lower layer 30 and upper layer 36) to form the body having a channel in the region. The method involves forming “recess[es]” (<i>i.e.</i>, channels) “at points corresponding to the areas of greatest body weight.” Regan at 1:31–36, 3:17–18.</p>

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'763 Patent Claim Chart: Regan

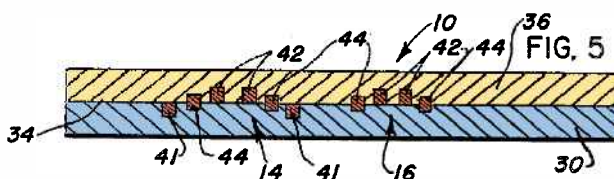
See also:

“A method of manufacturing a mattress according to the invention is to join two similar or dissimilar layers of resilient material, as by an adhesive, with at least two sets of less compressible ribs disposed therebetween. FIG. 4 illustrates such a construction. The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30. Two sets 14 and 16 of ribs 20 lie transversely across the lower layer 30 at desired points, as in FIGS. 1 through 3. Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” *Id.* at 3:5–22.

“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” *Id.* at 3:29–38.

[8.4] affixing an insert into the channel, the insert having a different firmness than the body of foam.

Regan teaches that the ribs—*i.e.*, inserts—“may be glued or otherwise attached (as by tying together) to the surface” of each mattress layer. Regan at 4:1–4. The ribs are also affixed due to the fact that the two layers of material are “join[ed] . . . as by an adhesive, with at least two sets of less compressible ribs disposed therebetween.” *Id.* at 3:5–8.



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The ribs (*i.e.*, inserts) are “of relatively low compressibility . . . to decreas[e] the overall compressibility of the mattress at those points where the ribs are located.” Regan at 1:21–43. As such, the ribs provide “enhanced localized support” by virtue of their greater firmness than the surrounding mattress layer. *Id.* at 3:26–28 (“The ribs 20 are less compressible than the upper layer 36 in order to provide enhanced localized support.”). That is, the ribs are “less compressible [*i.e.*, firmer] than the material of the mattress.” Regan at Abstract.

See also:

Ribs “lie[] in [the] recess[es] within the lower layer 30.” *Id.* at 3:17–21.

“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” *Id.* at 3:17–22.

“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” *Id.* at 3:29–38.

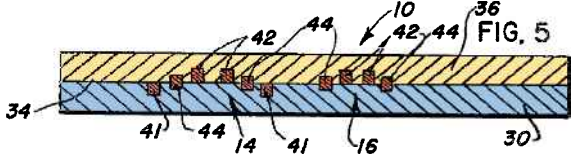
The ribs (*i.e.*, inserts) are “of relatively low compressibility . . . to decreas[e] the overall compressibility of the mattress at those points where the ribs are located.” Regan at 1:21–43. As such, the ribs provide “enhanced localized support” by virtue of their greater firmness than the surrounding mattress layer. *Id.* at 3:26–28.

“The ribs, which may be continuous or discontinuous, are less compressible than the material of the mattress and are spaced apart longitudinally from each other within each set. The sets are spaced apart longitudinally to correspond in position to the

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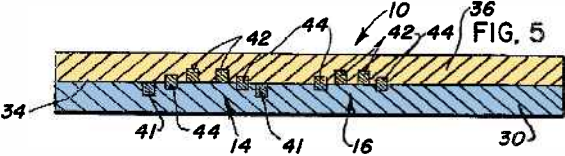
'763 Patent Claim Chart: Regan	
	<p>shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight, and hold the body generally straight.” <i>Id.</i> at Abstract.</p> <p>“According to the present invention, a single- or multi-layered mattress is provided which prevents ‘hammocking’ of the human body by providing several sets of support ribs of relatively low compressibility which extend transversely of the mattress and which are spaced longitudinally apart from one another at points corresponding to the areas of greatest body weight. The ribs extend substantially entirely across the mattress, and each rib is of a width substantially less than the width of an area to be supported.” <i>Id.</i> at 1:31–40.</p> <p>“It is readily apparent that, upon the application of body weight to the mattress 10, each rib 20 is compressible independently of the others, thereby supplying the greatest resistance to compression in those areas where the heaviest force is applied.” <i>Id.</i> at 2:47–51.</p>
[9] The method of claim 8 wherein	<i>See</i> Claim 8, above.
[9.1] forming the channel comprises cutting foam out of the body.	<p>It would have been obvious to a person of skill to form the channels disclosed in Regan in part through cutting, as cutting was the most common way of forming channels in the art at the time of the Asserted Patents.</p> <p><i>See also:</i></p> <p>“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” <i>Id.</i> at 3:17–22.</p>
[11] The method of claim 8 further comprising	<i>See</i> Claim 8, above.
[11.1] covering the mattress with one or more conventional mattress covering materials.	<p>A person of ordinary skill in the art would understand that the mattress described in Regan would have a standard mattress cover.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Regan, it would be obvious to a person of ordinary skill in the art, as explained below.</p>

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'763 Patent Claim Chart: Regan	
[12] The method of claim 8 wherein	See Claim 8, above.
[12.1] the size of the insert is substantially equal to the size of the channel.	<p>Regan teaches that the ribs—<i>i.e.</i>, inserts—are substantially equal to the size of the recesses, and “may be glued or otherwise attached (as by tying together) to the surface” of each mattress layer. Regan at 4:1–4.</p>  <p>See also:</p> <p>Ribs “lie[] in [the] recess[es] within the lower layer 30.” <i>Id.</i> at 3:17–21.</p> <p>“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” <i>Id.</i> at 3:17–22.</p> <p>“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” <i>Id.</i> at 3:29–38.</p>

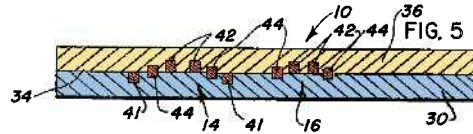
150. Regan anticipates and/or renders obvious claims 5, 6, and 8 of the '173 patent under Plaintiffs' incorrect claim interpretation, as shown below:

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’173 Patent Claim Chart: Regan	
<p>[5] A method of manufacturing a mattress comprising:</p>	<p>Regan describes “[a] method of manufacturing a mattress according to the invention.” Regan at 3:5–8.</p> <p><i>See also:</i></p> <p>“A method of manufacturing a mattress according to the invention is to join two similar or dissimilar layers of resilient material, as by an adhesive, with at least two sets of less compressible ribs disposed therebetween.” <i>Id.</i> at 3:5–9.</p>
<p>[5.1] providing a body made of foam shaped and sized for use as a mattress;</p>	<p>The method involves providing a body “of a resilient material, such as molded foam,” and “may be fabricated from two similar or dissimilar layers,” such as lower layer 30 (blue) and upper layer 36 (yellow). Regan at 2:17–22.</p>  <p><i>See also:</i></p> <p>“FIG. 1 illustrates a mattress, generally designated 10, embodying the present invention. The mattress 10 is illustrated as a single layer 11 of a resilient material, such as molded foam, but it is to be understood that the mattress 10 may be fabricated from two similar or dissimilar layers, as described below.” <i>Id.</i> at 2:17–22.</p> <p>“The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30.” <i>Id.</i> at 3:9–15.</p>
<p>[5.2] locating a region of the body where increased support is desired;</p>	<p>The Regan mattress targets “the areas of greatest body weight,” such as “the shoulder or buttocks area.” Regan at 1:31–36, 2:58–61.</p> <p><i>See also:</i></p>

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’173 Patent Claim Chart: Regan	
	<p>“The sets are spaced apart longitudinally to correspond in position to the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight, and hold the body generally straight.” <i>Id.</i> at Abstract.</p> <p>“Each set 14 and 16 is positioned within the mattress 10 to correspond to the areas of greatest weight of a user (not shown) lying on the top surface 12. In FIG. 1, if the head of the user is closest to the end 22 of the mattress 10, the set 14 corresponds to the shoulder area of the user and the set 16 corresponds to the area of the user's buttocks. A sufficient number of ribs 20 is provided in each set 14 and 16 to provide a sufficiently wide support area. Although only two sets of ribs are shown in FIG. 1, it is to be understood that additional ribs may be provided for the calf area, the head area, etc.” <i>Id.</i> at 2:35–46.</p>
[5.3] forming a channel into the body within the region; and	<p>The method involves forming “recess[es]” (<i>i.e.</i>, channels) “at points corresponding to the areas of greatest body weight.” Regan at 1:31–36, 3:17–18.</p> <p><i>See also:</i></p> <p>“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” <i>Id.</i> at 3:17–22.</p> <p>“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” <i>Id.</i> at 3:29–38.</p>
[5.4a] affixing an insert into the channel,	<p>Regan teaches that the ribs—<i>i.e.</i>, inserts—“may be glued or otherwise attached (as by tying together) to the surface” of each mattress layer. Regan at 4:1–4. The ribs are also affixed due to the fact that the two layers of material are “join[ed] . . . as by an adhesive, with at least two sets of less compressible ribs disposed therebetween.” <i>Id.</i> at 3:5–8.</p>

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The ribs (*i.e.*, inserts) are “of relatively low compressibility . . . to decreas[e] the overall compressibility of the mattress at those points where the ribs are located.” Regan at 1:21–43. As such, the ribs provide “enhanced localized support” by virtue of their greater firmness than the surrounding mattress layer. *Id.* at 3:26–28 (“The ribs 20 are less compressible than the upper layer 36 in order to provide enhanced localized support.”). That is, the ribs are “less compressible [*i.e.*, firmer] than the material of the mattress.” Regan at Abstract.

See also:

Ribs “lie[] in [the] recess[es] within the lower layer 30.” *Id.* at 3:17–21.

“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” *Id.* at 3:17–22.

“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41–44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” *Id.* at 3:29–38.

The ribs (*i.e.*, inserts) are “of relatively low compressibility . . . to decreas[e] the overall compressibility of the mattress at those points where the ribs are located.” Regan at 1:21–43. As such, the ribs provide “enhanced localized support” by virtue of their greater firmness than the surrounding mattress layer. *Id.* at 3:26–28.

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'173 Patent Claim Chart: Regan	
	<p>“The ribs, which may be continuous or discontinuous, are less compressible than the material of the mattress and are spaced apart longitudinally from each other within each set. The sets are spaced apart longitudinally to correspond in position to the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight, and hold the body generally straight.” <i>Id.</i> at Abstract.</p> <p>“According to the present invention, a single- or multi-layered mattress is provided which prevents ‘hammocking’ of the human body by providing several sets of support ribs of relatively low compressibility which extend transversely of the mattress and which are spaced longitudinally apart from one another at points corresponding to the areas of greatest body weight. The ribs extend substantially entirely across the mattress, and each rib is of a width substantially less than the width of an area to be supported.” <i>Id.</i> at 1:31–40.</p> <p>“It is readily apparent that, upon the application of body weight to the mattress 10, each rib 20 is compressible independently of the others, thereby supplying the greatest resistance to compression in those areas where the heaviest force is applied.” <i>Id.</i> at 2:47–51.</p>
[5.4b] the insert having a greater firmness than the body of foam;	<p>The ribs (<i>i.e.</i>, inserts) are “of relatively low compressibility . . . to decreas[e] the overall compressibility of the mattress at those points where the ribs are located.” Regan at 1:21–43. As such, the ribs provide “enhanced localized support” by virtue of their greater firmness than the surrounding mattress layer. <i>Id.</i> at 3:26–28 (“The ribs 20 are less compressible than the upper layer 36 in order to provide enhanced localized support.”). That is, the ribs are “less compressible [<i>i.e.</i>, firmer] than the material of the mattress.” Regan at Abstract.</p> <p><i>See also:</i></p> <p>“The ribs, which may be continuous or discontinuous, are less compressible than the material of the mattress and are spaced apart longitudinally from each other within each set. The sets are spaced apart longitudinally to correspond in position to the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight, and hold the body generally straight.” <i>Id.</i> at Abstract.</p>

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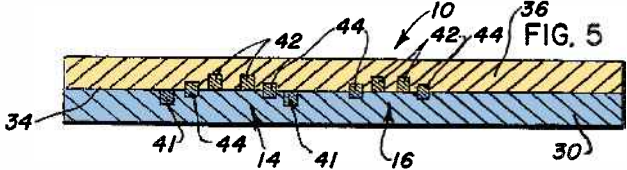
'173 Patent Claim Chart: Regan	
	<p>“According to the present invention, a single- or multi-layered mattress is provided which prevents ‘hammocking’ of the human body by providing several sets of support ribs of relatively low compressibility which extend transversely of the mattress and which are spaced longitudinally apart from one another at points corresponding to the areas of greatest body weight. The ribs extend substantially entirely across the mattress, and each rib is of a width substantially less than the width of an area to be supported.” <i>Id.</i> at 1:31–40.</p> <p>“It is readily apparent that, upon the application of body weight to the mattress 10, each rib 20 is compressible independently of the others, thereby supplying the greatest resistance to compression in those areas where the heaviest force is applied.” <i>Id.</i> at 2:47–51.</p>
[5.5] wherein forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel.	<p>Under Plaintiffs’ interpretation of the claims, Regan discloses that forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel. Rectangular foam pieces lower layer 30 and upper layer 36 are “join[ed] . . . by an adhesive,” with the recesses (<i>i.e.</i>, channels) “disposed therebetween.” Regan at 3:5–9.</p> <p>“A method of manufacturing a mattress according to the invention is to join two similar or dissimilar layers of resilient material, as by an adhesive, with at least two sets of less compressible ribs disposed therebetween. FIG. 4 illustrates such a construction. The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30. Two sets 14 and 16 of ribs 20 lie transversely across the lower layer 30 at desired points, as in FIGS. 1 through 3. Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” <i>Id.</i> at 3:5–22.</p>

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'173 Patent Claim Chart: Regan	
	<p>“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41-44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” <i>Id.</i> at 3:29–38.</p>
[6] The method of claim 5	<i>See</i> Claim 5, above.
[6.1] wherein forming the channel further comprises cutting foam out of the body.	<p>It would have been obvious to a person of skill to form the channels disclosed in Regan in part through cutting, as cutting was the most common way of forming channels in the art at the time of the Asserted Patents..</p> <p><i>See also:</i></p> <p>“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” <i>Id.</i> at 3:17–22.</p>
[8] The method of claim 5 further comprising	<i>See</i> Claim 5, above.
[8.1] covering the mattress with one or more conventional mattress covering materials.	<p>A person of ordinary skill in the art would understand that the mattress described in Regan would have a standard mattress cover.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Regan, it would be obvious to a person of ordinary skill in the art, as explained below.</p>

151. Regan anticipates and/or renders obvious claims 10 and 13 of the '935 patent under Plaintiffs' incorrect claim interpretation, as shown below:

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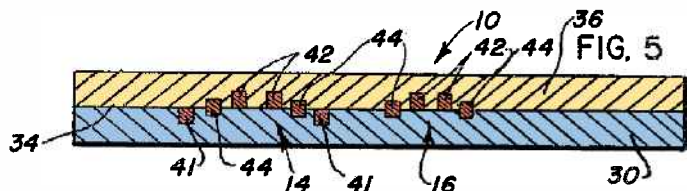
’935 Patent Claim Chart: Regan	
<p>[10] A method of manufacturing a mattress comprising:</p>	<p>Regan describes “[a] method of manufacturing a mattress according to the invention.” Regan at 3:5–8.</p> <p><i>See also:</i></p> <p>“A method of manufacturing a mattress according to the invention is to join two similar or dissimilar layers of resilient material, as by an adhesive, with at least two sets of less compressible ribs disposed therebetween.” <i>Id.</i> at 3:5–9.</p>
<p>[10.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;</p>	<p>The method involves providing a body “of a resilient material, such as molded foam,” and “may be fabricated from two similar or dissimilar layers,” such as lower layer 30 (blue) and upper layer 36 (yellow). Regan at 2:17–22.</p>  <p><i>See also:</i></p> <p>“FIG. 1 illustrates a mattress, generally designated 10, embodying the present invention. The mattress 10 is illustrated as a single layer 11 of a resilient material, such as molded foam, but it is to be understood that the mattress 10 may be fabricated from two similar or dissimilar layers, as described below.” <i>Id.</i> at 2:17–22.</p> <p>“The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30.” <i>Id.</i> at 3:9–15.</p>
<p>[10.2] locating a region of the body where increased support is desired;</p>	<p>The Regan mattress targets “the areas of greatest body weight,” such as “the shoulder or buttocks area.” Regan at 1:31–36, 2:58–61.</p> <p><i>See also:</i></p>

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'935 Patent Claim Chart: Regan	
	<p>“The sets are spaced apart longitudinally to correspond in position to the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight, and hold the body generally straight.” <i>Id.</i> at Abstract.</p> <p>“Each set 14 and 16 is positioned within the mattress 10 to correspond to the areas of greatest weight of a user (not shown) lying on the top surface 12. In FIG. 1, if the head of the user is closest to the end 22 of the mattress 10, the set 14 corresponds to the shoulder area of the user and the set 16 corresponds to the area of the user's buttocks. A sufficient number of ribs 20 is provided in each set 14 and 16 to provide a sufficiently wide support area. Although only two sets of ribs are shown in FIG. 1, it is to be understood that additional ribs may be provided for the calf area, the head area, etc.” <i>Id.</i> at 2:35–46.</p>
[10.3] assembling the rectangular foam pieces to form the body having a channel in the region; and	<p>Under Plaintiffs’ incorrect interpretation of the claims, Regan teaches assembling the rectangular foam pieces (<i>i.e.</i>, lower layer 30 and upper layer 36) to form the body having a channel in the region. The method involves forming “recess[es]” (<i>i.e.</i>, channels) “at points corresponding to the areas of greatest body weight.” Regan at 1:31–36, 3:17–18.</p> <p><i>See also:</i></p> <p>“A method of manufacturing a mattress according to the invention is to join two similar or dissimilar layers of resilient material, as by an adhesive, with at least two sets of less compressible ribs disposed therebetween. FIG. 4 illustrates such a construction. The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30. Two sets 14 and 16 of ribs 20 lie transversely across the lower layer 30 at desired points, as in FIGS. 1 through 3. Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” <i>Id.</i> at 3:5–22.</p>

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’935 Patent Claim Chart: Regan

	<p>“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41-44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” <i>Id.</i> at 3:29–38.</p>
<p>[10.4a] affixing at least one insert having planar top and bottom surfaces into the channel,</p>	<p>Regan teaches that the ribs—<i>i.e.</i>, inserts—“may be glued or otherwise attached (as by tying together) to the surface” of each mattress layer. Regan at 4:1–4. The ribs are also affixed due to the fact that the two layers of material are “join[ed] . . . as by an adhesive, with at least two sets of less compressible ribs disposed therebetween.” <i>Id.</i> at 3:5–8.</p> <p>The method involves forming “recess[es]” (<i>i.e.</i>, channels) “at points corresponding to the areas of greatest body weight,” and then inserting ribs (<i>i.e.</i>, inserts) “in [the] recess[es].” <i>Id.</i> at 1:31–36, 3:17–21, 3:29–38. The ribs have planar top and bottom surfaces.</p>  <p><i>See also:</i></p> <p>“According to the present invention, a single- or multi-layered mattress is provided which prevents ‘hammocking’ of the human body by providing several sets of support ribs of relatively low compressibility which extend transversely of the mattress and which are spaced longitudinally apart from one another at points corresponding to the areas of greatest body weight. The ribs extend substantially entirely across the mattress, and each rib is of a width substantially less than the width of an area to be supported.” <i>Id.</i> at 1:31–40.</p> <p>“Disposed within the mattress 10 are two sets 14 and 16 of support ribs 20. Each rib 20 is of a material of less</p>

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’935 Patent Claim Chart: Regan	
	<p>compressibility than the material of the mattress layer 11 and extends substantially entirely across the width of the mattress 10. Although the ribs 20 illustrated in FIGS. 1 through 6 are of rectangular cross section, they need not be rectangular, but may be of a circular cross section or of another desired configuration.” <i>Id.</i> at 2:27–34.</p> <p>“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” <i>Id.</i> at 3:17–22.</p> <p>“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41-44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” <i>Id.</i> at 3:29–38.</p>
[10.4b] wherein the channel has a physical shape configured to receive the at least one insert,	<p>The recesses are shaped to receive the ribs (<i>i.e.</i>, inserts). Regan at 3:17-22.</p> <p><i>See also:</i></p> <p>“Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” <i>Id.</i> at 3:17–22.</p> <p>“FIG. 5 illustrates a multi-layer mattress 10 comprising a lower layer 30 and an upper layer 36, similar to the corresponding layers of FIG. 4, with two sets 14 and 16 of ribs 41-44 of similar cross section disposed between the layers 30 and 36 in an inverted flattened U, to serve the same function as the ribs 20 in FIG. 3. In the case of FIG. 5, some ribs 41 lie entirely within the lower layer 30, some ribs 42 lie entirely within the upper layer 36, and some ribs 44 extend into the upper layer 36 from within the lower layer 30.” <i>Id.</i> at 3:29–38.</p>

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'935 Patent Claim Chart: Regan	
<p>[10.4c] the insert having a different mechanical property than the body of foam,</p>	<p>The ribs (<i>i.e.</i>, inserts) are “of relatively low compressibility . . . to decreas[e] the overall compressibility of the mattress at those points where the ribs are located.” Regan at 1:21–43. In particular, the ribs are “less compressible than the upper layer 36 in order to provide enhanced localized support.” <i>Id.</i> at 3:26–28.</p> <p><i>See also:</i></p> <p>“The ribs, which may be continuous or discontinuous, are less compressible than the material of the mattress and are spaced apart longitudinally from each other within each set. The sets are spaced apart longitudinally to correspond in position to the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight, and hold the body generally straight.” <i>Id.</i> at Abstract.</p> <p>“According to the present invention, a single- or multi-layered mattress is provided which prevents ‘hammocking’ of the human body by providing several sets of support ribs of relatively low compressibility which extend transversely of the mattress and which are spaced longitudinally apart from one another at points corresponding to the areas of greatest body weight. The ribs extend substantially entirely across the mattress, and each rib is of a width substantially less than the width of an area to be supported.” <i>Id.</i> at 1:31–40.</p> <p>“A method of manufacturing a mattress according to the invention is to join two similar or dissimilar layers of resilient material, as by an adhesive, with at least two sets of less compressible ribs disposed therebetween. FIG. 4 illustrates such a construction. The mattress 10 of FIG. 4 includes a lower layer 30 with a planar support engaging bottom surface 32 (support not shown), and a generally planar top surface 34. An upper layer 36 has a planar body supporting top surface 38 and a planar bottom surface 40 which engages the upper surface 34 of the lower layer 30. Two sets 14 and 16 of ribs 20 lie transversely across the lower layer 30 at desired points, as in FIGS. 1 through 3. Each rib 20 lies in a recess within the lower layer 30 or, if the lower layer 30 is of less resilience than the upper layer 36, each rib 20 may be molded from the lower layer 30 as a unitary component thereof. Each rib 20 is received in a complementary recess in the upper layer 36.” <i>Id.</i> at 3:5–22.</p>

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'935 Patent Claim Chart: Regan	
[10.4d] and wherein the insert does not entirely fill the channel.	<p>The ribs can be “discontinuous,” thus not entirely filling the channel. Regan at 1:51–53, Fig. 1.</p> <p>“The ribs, which may be continuous or discontinuous, are less compressible than the material of the mattress and are spaced apart longitudinally from each other within each set. The sets are spaced apart longitudinally to correspond in position to the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight, and hold the body generally straight.” <i>Id.</i> at Abstract.</p> <p>“Within each set, one or more of the ribs may be of a larger cross section than the remaining ribs in order to provide localized support within the area of that set. Alternately, ribs of similar size may be disposed vertically from one another as well as horizontally so as to provide localized support relatively close to the level of the user's body. One embodiment of the invention utilizes discontinuous ribs to provide independent support within an area of enhanced support.” <i>Id.</i> at 1:44–53.</p>
[13] The method of manufacturing a mattress of claim 10, wherein	<i>See</i> Claim 10, above.
[13.1] affixing at least one insert into the channel comprises applying adhesive, heat, or frictional restraint.	Regan teaches that the ribs— <i>i.e.</i> , inserts—“may be glued or otherwise attached (as by tying together) to the surface” of each mattress layer. Regan at 4:1–4. The ribs are also affixed due to the fact that the two layers of material are “join[ed] . . . as by an adhesive, with at least two sets of less compressible ribs disposed therebetween.” <i>Id.</i> at 3:5–8.

(i) Rebuttal to Plaintiffs’ preliminary injunction arguments

152. Plaintiffs’ only rebuttal argument with respect to the ’935 patent during the preliminary injunction was that Regan did not disclose an insert that is “affixed” within a channel. *See* D.I. 51 at 24. This is incorrect. As explained in the chart above, Regan discloses the use of glue to hold inserts in place. *See* Regan at 4:1–4. Regan also teaches that the two layers are laminated together, which would secure the ribs permanently in place in the mattress. *Id.* at 3:5–8.

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153. For the '173 patent, Plaintiffs also argued that “Regan fails to disclose an insert that is of a ‘greater firmness than’ the body, as required by Claim 5.” For the reasons explained with respect to the '763 patent, Plaintiffs are incorrect. Plaintiffs admit that the ribs are “less compressible than the upper layer 36 in order to provide enhanced localized support.” Regan at 3:26–28. Regan teaches that the lower layer 30 and upper layer 36 “may be of the same resilience.” Regan at 3:18–19. Thus, if the ribs are less compressible (firmer) than the upper layer 36, then they are also less compressible (firmer) than the lower layer 30. In any event, as explained above, both lower layer 30 and upper layer 36 are “bodies” as Plaintiffs are interpreting the term to accuse the Casper Wave of infringing. Thus, Plaintiffs have already admitted that the ribs in the upper layer reinforce that layer.

(ii) Obviousness based on Regan

154. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Regan, the asserted method claims would have been obvious to a person of ordinary skill in the art in light of Regan alone, as well as obvious over Regan in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Regan with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

155. For example, to the extent it is assumed that Regan does not expressly or inherently disclose inserts “affixed” in the channels, it would have been obvious to a person of ordinary skill in the art to affix the inserts in the channels. The USPTO has found that affixing using adhesives or heat was an obvious matter of design choice. '935 FH, 10/17/2013 Office Action at 2; *see also* '935 FH, 4/9/2014 Office Action at 2; '620 FH, 9/11/2015 Office Action at 6. Furthermore, as discussed herein, references such as Antinori disclose placing inserts in a channel after adhesive has been applied to the layer, thus affixing the inserts into the channel.

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1) It would have been obvious to cover the Regan mattress with a conventional mattress cover

156. To the extent Regan is assumed not to expressly or inherently disclose “covering the mattress with one or more conventional mattress covering materials” as required by claim 11 of the ’763 patent and claim 8 of the ’173 patent, it would have been obvious to modify Scheuch to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. It is standard to cover a mattress core with a conventional mattress cover or other material prior to use as a mattress. A cover protects the mattress core from dirt and contamination which can increase the useful life of the mattress, often provides a flammability barrier, and offers an aesthetic, differentiating, and finished consumer product. Several references also raised in this case specifically describe the use of a mattress cover, including:

- Antinori at 4:39–43 (“durable cloth cover”);
- Kennaway at Abstract (“flexible cover”); and
- GB ’433 at 3:5 (“cloth sleeve”).

It would have been obvious to combine Regan with any of these references, as they all relate to standard mattress design.

2) It would have been obvious to cut foam out of the body in Regan

157. To the extent “forming the channel further comprises cutting foam out of the body” as required by claim 6 is assumed not to be expressly or inherently disclosed in Regan, it would have been obvious to modify Regan to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. This would have been obvious for manufacturing reasons. Two common methods at the time of the invention for forming channels/recesses in foam were cutting and molding.

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158. Indeed, during prosecution of the '173 patent, the examiner rejected certain claims as obvious because “[t]he method of forming the channels whether by cutting or molding is an obvious matter of design choice.” ’173 FH, 7/31/2003 Office Action at 2. Plaintiffs never disputed the examiner’s characterization of using cutting as “an obvious matter of design choice.” It therefore would have been obvious to a person of ordinary skill in the art to manufacture the mattress described in Regan by using cutting to form channels in the body.

3) It would have been obvious to modify Regan to have inserts that do not entirely fill the channel

159. To the extent Regan is assumed to not expressly or inherently disclose that the “insert does not entirely fill the channel,” it would have been obvious to modify Regan to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. For example, configuring an insert to not entirely fill a recess was taught in, *e.g.*, in DE 3937214 (DE ’214). As explained above, DE ’214 teaches not entirely filling a channel (either laterally or to its full depth) “in order to produce [a] desired resistance pattern.” DE ’214 at 8. Indeed, it was known by persons of ordinary skill in the art at the time that foam modification and convolution affects the feel of the mattress—referred to in the art as “surface modification.” Having the foam insert not fill the entire channel would be an obvious design option to selectively create a softer surface for a customer. It would have been obvious to combine the teachings of Regan with DE ’214, as both relate to mattress design and both seek to provide selective firmness over the surface of a mattress.

160. Thus, it would have been obvious in light of Regan itself, as well as when Regan is considered with DE ’214, for the insert to not entirely fill the channel, as required by claim 10 of the ’935 patent.

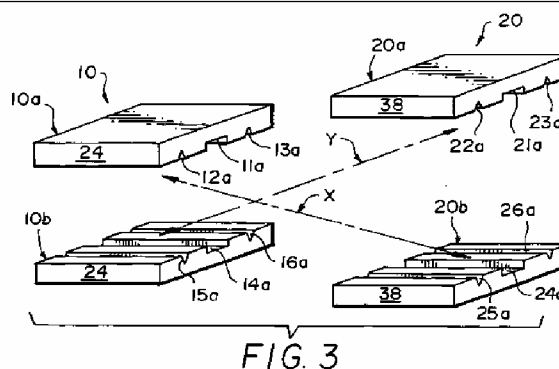
HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**b. Antinori Anticipates and/or Renders Obvious the Asserted Method Claims Under Plaintiffs’ Incorrect Claim Interpretation**

161. Antinori anticipates and/or renders obvious claims 8, 9, 11, and 12 of the ’763 patent under Plaintiffs’ incorrect claim interpretation, as shown below:

’763 Patent Claim Chart: Antinori	
<p>[8] A method of manufacturing a mattress comprising:</p>	<p>Antinori describes “[a] method of manufacturing mattresses.” Antinori at Abstract.</p> <p><i>See also:</i></p> <p>“A method of manufacturing mattresses is achieved by providing first and second layers of latex material having different indentation load deflection values.” <i>Id.</i></p> <p>“A novel mattress constructed in accordance with this invention is fabricated from several layers, cores, laminates, or layer portions differing in Indentation Load Deflection (ILD) values.” <i>Id.</i> at 3:21–24.</p>
<p>[8.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;</p>	<p>The method includes providing rectangular foam pieces (<i>i.e.</i>, layer portions 10a and 20b) made of foam latex, which together are shaped and sized to be used as a mattress. Antinori at 2:27–30.</p> <div> </div> <p>[Excerpt of Fig. 3]</p> <p><i>See also:</i></p> <p>“In the simplest form of the invention, two layers of mattress materials, preferably foam latex, are provided which differ from each other in their Indentation Load Deflection (ILD) values.” <i>Id.</i> at 2:27–30.</p>

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'763 Patent Claim Chart: Antinori



[8.2] locating a region of the body where increased support is desired;

The method includes locating a region of the body (*i.e.*, under the “postural region of a person” in the center of the mattress) in which to provide “excellent postural support.” Antinori at 4:27–31, 4:44–47, 5:1–7.

See also:

“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” *Id.* at 2:39–51.

“The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” *Id.* at 4:28–31.

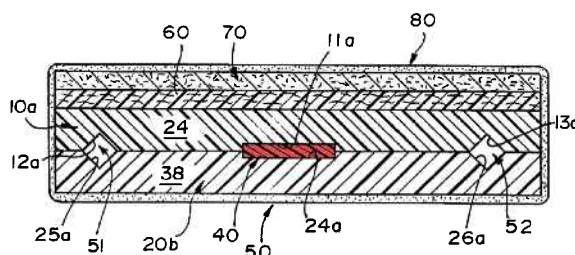
“Furthermore, through the utilization of one or more transverse recesses, such as the recesses 11a, 24a and 14a, 21a, postural support can be firmed in a selective fashion through the insert 30, while the channels or voids 51, 52 provide necessary pressure relief at the head and foot sections, respectively, of the mattress 50.” *Id.* at 5:1–6.

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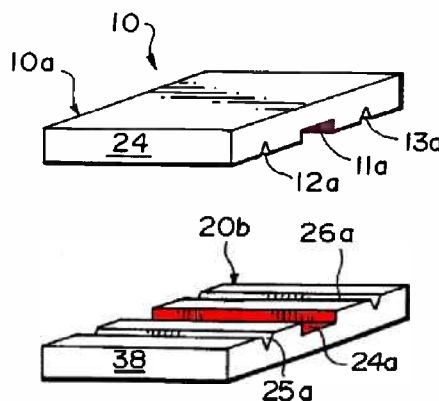
[8.3] assembling the plurality of rectangular foam pieces to form the body having a channel in the region; and

Under Plaintiffs' interpretation of the claims, Antinori discloses this element. The two rectangular layer portions 10a and 20b are assembled (*i.e.*, "brought into overlying aligned bonding relationship to each other") and include "a centrally located transverse rectangularly outwardly opening groove, channel or recess" (11a) in layer portion 10a and an "[i]dentical transverse channel[]" (24a) in the layer portion 20b. These channels are formed in the postural region where increased support is desired. Antinori at 4:5–14, 22–27, 37–47.

The court construed "channel" as "a long, narrow groove." While Fig. 4A depicts element 11a as being wide, Antinori expressly says that element 11a can be shaped as a "groove, channel, or recess." As explained above, Antinori also teaches that the mattress can have "one or more" recesses in that region. A person of ordinary skill in the art would thus understand Antinori to disclose long, narrow grooves in the medial region of the mattress. *See* Antinori at 2:39–43, 3:10–18, 4:5–14.

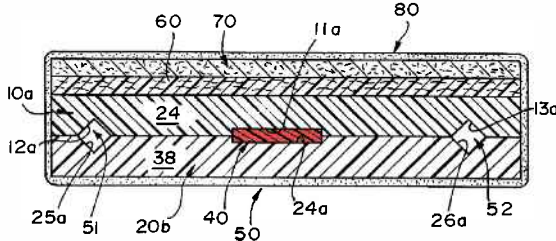


[Excerpt of Fig. 4 (annotated)]



[Excerpt of Fig. 3 (annotated)]

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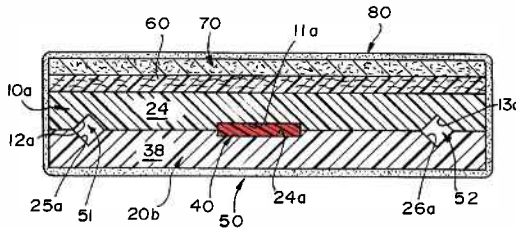
	<p><i>See also:</i></p> <p>“Double headed broken arrows X, Y in FIG. 3 diagrammatically depict the manner in which the layer portions 10 a, 20 b are cross assembled to each other, as are the layer portions 10 b, 20 a.” <i>Id.</i> at 4:15–18.</p>
<p>[8.4] affixing an insert into the channel, the insert having a different firmness than the body of foam.</p>	<p>One or more inserts (<i>e.g.</i>, insert 40) are affixed in the medial recesses of layer portion 20b using adhesive. Antinori at 2:39–43, 3:10–18, 4:18–27. The insert is “firmer” (<i>i.e.</i>, has an ILD of 60, compared to the ILDs of 24 and 38 of the two layer portions) to “afford[] desired firmness in the postural region of a person.” <i>Id.</i> at 3:57–58, 4:18–31.</p>  <p>[Excerpt of Fig. 4 (annotated)]</p> <p><i>See also:</i></p> <p>“Medial recesses receive postural inserts of relatively high ILD values” <i>Id.</i> at Abstract.</p> <p>“For example, the ILD of one layer might be 24, whereas the ILD of a second layer might be 38.” <i>Id.</i> at 2:30–32.</p> <p>“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer portion of 38 ILD value with, of course, the recesses(and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” <i>Id.</i> at 2:39–51.</p>

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'763 Patent Claim Chart: Antinori	
	<p>“[A]n insert 40 (FIG. 4), preferably latex having a relatively high Indentation Load Deflection (ILD) value, such as ILD 60, is inserted in one of the central recesses 11a, 24a and one of the central recesses 14a, 21a. The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4. The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:17–31.</p>
[9] The method of claim 8 wherein	<i>See</i> Claim 8, above.
[9.1] forming the channel comprises cutting foam out of the body.	<p>The channels are formed “by conventional cutting tools, such as saws.” Antinori at 4:5–8.</p> <p><i>See also:</i></p> <p>“The layer portions 10a, 10b, 20a and 20b are thereafter provided with identically located cross-matching transverse grooves, channels or recesses by conventional cutting tools, such as saws. The layer portion 10a is provided with a centrally located transverse rectangularly outwardly opening groove, channel or recess 11 a and on opposite sides thereof is a transverse triangular outwardly opening groove, channel or recess 12 a, 13 a. Identical transverse channels, slots or recesses 14a, 15a, 16a; 21a, 22a, 23a and 24a, 25a, 26a are formed in the respective layer portions 10b, 20a and 20b.” <i>Id.</i> at 4:5–14.</p>
[11] The method of claim 8 further comprising	<i>See</i> Claim 8, above.
[11.1] covering the mattress with one or more conventional mattress covering materials.	<p>“FIG. 4 is an enlarged cross-sectional view through a multi-ply mattress which further includes one or more inserts placed in the central or medial recesses prior to sandwiching and adhesively bonding the 24 ILD value layer portion to the 38 ILD value layer portion, a thinner convoluted 24 ILD value layer adhesively bonded to the first mentioned 24 ILD value layer, and a silk fiber blend overlying the convoluted layer with all layers being encapsulated in an outer layer of cloth.” Antinori at 3:10–18.</p>

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'763 Patent Claim Chart: Antinori

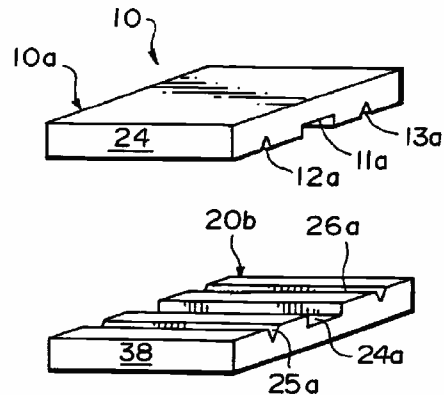
	<p><i>See also:</i></p> <p>“A third layer 60 (FIG. 4) of convoluted zoned 24 ILD value compression latex is adhesively bonded to the uppermost surface of the latex layer portion 10a. A silk fiber blend layer 70 is applied atop the convoluted layer 60 and all layers 10a, 20b, 60 and 70 are encapsulated in a durable cloth cover 80 conventionally sewn in place in a conventional fashion.” <i>Id.</i> at 4:37–43.</p>
[12] The method of claim 8 wherein	<p><i>See Claim 8, above.</i></p>
[12.1] the size of the insert is substantially equal to the size of the channel.	<p>One or more inserts (<i>e.g.</i>, insert 40), which are substantially equal to the size of the recesses, are affixed in the medial recesses of layer portion 20b using adhesive. Antinori at 2:39–43, 3:10–18, 4:18–27.</p>  <p>[Excerpt of Fig. 4 (annotated)]</p> <p><i>See also:</i></p> <p>“Medial recesses receive postural inserts of relatively high ILD values” <i>Id.</i> at Abstract.</p> <p>“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” <i>Id.</i> at 2:39–51.</p>

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'763 Patent Claim Chart: Antinori	
	<p>“The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4. The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:22–31.</p> <p>The “one or more inserts” are “placed in the central or medial recesses” and affixed therein when the surrounding layer portions are “sandwich[ed]” and “adhesively bo[und].” <i>Id.</i> at 3:11–15.</p>

162. Antinori anticipates and/or renders obvious claims 5, 6, and 8 of the '173 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'173 Patent Claim Chart: Antinori	
[5] A method of manufacturing a mattress comprising:	<p>Antinori describes “[a] method of manufacturing mattresses.” Antinori at Abstract.</p> <p><i>See also:</i></p> <p>“A method of manufacturing mattresses is achieved by providing first and second layers of latex material having different indentation load deflection values.” <i>Id.</i></p> <p>“A novel mattress constructed in accordance with this invention is fabricated from several layers, cores, laminates, or layer portions differing in Indentation Load Deflection (ILD) values.” <i>Id.</i> at 3:21–24.</p>
[5.1] providing a body made of foam shaped and sized for use as a mattress;	<p>The method includes providing a body (<i>i.e.</i>, layer portions 10a and 20b) made of foam latex, which together are shaped and sized to be used as a mattress. Antinori at 2:27–30.</p>

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[Excerpt of Fig. 3]

See also:

“In the simplest form of the invention, two layers of mattress materials, preferably foam latex, are provided which differ from each other in their Indentation Load Deflection (ILD) values.” *Id.* at 2:27–30.

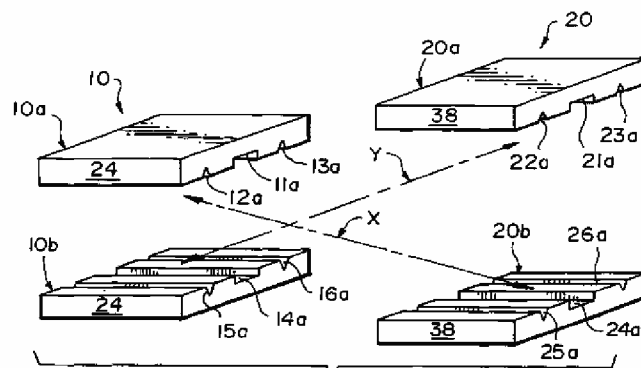


FIG. 3

[5.2] locating a region of the body where increased support is desired;

The method includes locating a region of the body (*i.e.*, under the “postural region of a person” in the center of the mattress) in which to provide “excellent postural support.” Antinori at 4:27–31, 4:44–47, 5:1–7.

See also:

“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer

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'173 Patent Claim Chart: Antinori

	<p>portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” <i>Id.</i> at 2:39–51.</p> <p>“The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:28–31.</p> <p>“Furthermore, through the utilization of one or more transverse recesses, such as the recesses 11a, 24a and 14a, 21a, postural support can be firmed in a selective fashion through the insert 30, while the channels or voids 51, 52 provide necessary pressure relief at the head and foot sections, respectively, of the mattress 50.” <i>Id.</i> at 5:1–6.</p>
<p>[5.3] forming a channel into the body within the region; and</p>	<p>The method includes forming “a centrally located transverse rectangularly outwardly opening groove, channel or recess” (11a) in layer portion 10a and an “[i]dentical transverse channel[]” (24a) in the layer portion 20b. These channels are formed in the postural region where increased support is desired. Antinori at 4:5–14.</p> <div> </div> <p>[Excerpt of Fig. 3 (annotated)]</p>

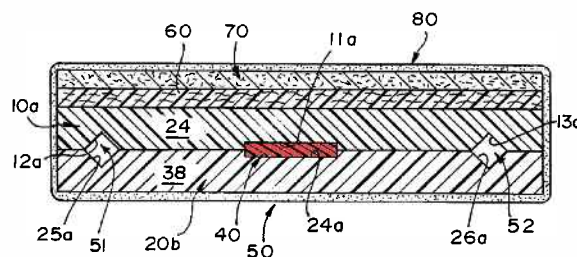
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See also:

“The layer portions 10a, 10b, 20a and 20b are thereafter provided with identically located cross-matching transverse grooves, channels or recesses by conventional cutting tools, such as saws. The layer portion 10a is provided with a centrally located transverse rectangularly outwardly opening groove, channel or recess 11a and on opposite sides thereof is a transverse triangular outwardly opening groove, channel or recess 12a, 13a. Identical transverse channels, slots or recesses 14a, 15a, 16a; 21a, 22a, 23a and 24a, 25a, 26a are formed in the respective layer portions 10b, 20a and 20b.” *Id.* at 4:5–14.

[5.4a] affixing an insert into the channel

One or more inserts (*e.g.*, insert 40) are affixed in the medial recesses of layer portion 20b using adhesive. Antinori at 2:39–43, 3:10–18, 4:18–27.



[Excerpt of Fig. 4 (annotated)]

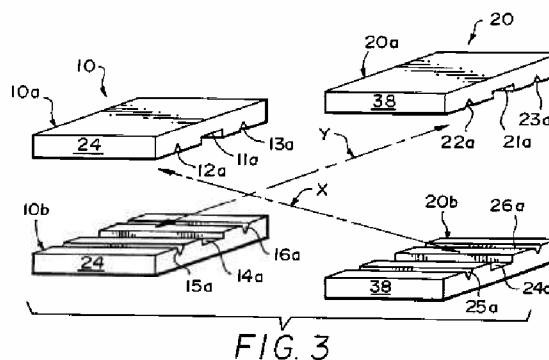
See also:

“Medial recesses receive postural inserts of relatively high ILD values” *Id.* at Abstract.

“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” *Id.* at 2:39–51.

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'173 Patent Claim Chart: Antinori	
	<p>“The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4. The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:22–31.</p> <p>The “one or more inserts” are “placed in the central or medial recesses” and affixed therein when the surrounding layer portions are “sandwich[ed]” and “adhesively bond[ed].” <i>Id.</i> at 3:11–15.</p>
[5.4b] the insert having a greater firmness than the body of foam;	<p>The insert is “firmer” (<i>i.e.</i>, has an ILD of 60, compared to the ILDs of 24 and 38 of the two layer portions) to “afford[] desired firmness in the postural region of a person.” Antinori at 3:57–58, 4:18–31.</p> <p><i>See also:</i></p> <p>“For example, the ILD of one layer might be 24, whereas the ILD of a second layer might be 38.” <i>Id.</i> at 2:30–32.</p> <p>“[A]n insert 40 (FIG. 4), preferably latex having a relatively high Indentation Load Deflection (ILD) value, such as ILD 60, is inserted in one of the central recesses 11a, 24a and one of the central recesses 14a, 21a. The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4. The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:17–31.</p>
[5.5] wherein forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel.	<p>Under Plaintiffs’ interpretation of the claims, Antinori discloses this element. The two rectangular layer portions 10a and 20b are assembled (<i>i.e.</i>, “brought into overlying aligned bonding relationship to each other”), and, with the a convoluted layer, silk fiber layer, and durable cloth cover, form a mattress. Antinori at 4:22–27, 37–47.</p>

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See also:

“Double headed broken arrows X, Y in FIG. 3 diagrammatically depict the manner in which the layer portions 10 a, 20 b are cross assembled to each other, as are the layer portions 10 b, 20 a.” *Id.* at 4:15–18.

[6] The method of claim 5

See Claim 5, above.

[6.1] wherein forming the channel further comprises cutting foam out of the body.

The channels are formed “by conventional cutting tools, such as saws.” Antinori at 4:5–8.

See also:

“The layer portions 10a, 10b, 20a and 20b are thereafter provided with identically located cross-matching transverse grooves, channels or recesses by conventional cutting tools, such as saws. The layer portion 10a is provided with a centrally located transverse rectangularly outwardly opening groove, channel or recess 11 a and on opposite sides thereof is a transverse triangular outwardly opening groove, channel or recess 12 a, 13 a. Identical transverse channels, slots or recesses 14a, 15a, 16a; 21a, 22a, 23a and 24a, 25a, 26a are formed in the respective layer portions 10b, 20a and 20b.” *Id.* at 4:5–14.

[8] The method of claim 5 further comprising

See Claim 5, above.

[8.1] covering the mattress with one or more conventional mattress covering materials.

“FIG. 4 is an enlarged cross-sectional view through a multi-ply mattress which further includes one or more inserts placed in the central or medial recesses prior to sandwiching and adhesively bonding the 24 ILD value layer portion to the 38

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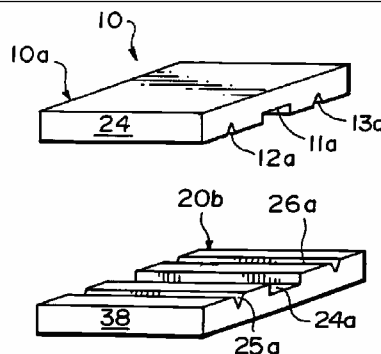
'173 Patent Claim Chart: Antinori	
	<p>ILD value layer portion, a thinner convoluted 24 ILD value layer adhesively bonded to the first mentioned 24 ILD value layer, and a silk fiber blend overlying the convoluted layer with all layers being encapsulated in an outer layer of cloth.” Antinori at 3:10–18.</p> <p><i>See also:</i></p> <p>“A third layer 60 (FIG. 4) of convoluted zoned 24 ILD value compression latex is adhesively bonded to the uppermost surface of the latex layer portion 10a. A silk fiber blend layer 70 is applied atop the convoluted layer 60 and all layers 10a, 20b, 60 and 70 are encapsulated in a durable cloth cover 80 conventionally sewn in place in a conventional fashion.” <i>Id.</i> at 4:37–43.</p>

163. Antinori anticipates and/or renders obvious claims 10 and 13 of the '935 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'935 Patent Claim Chart: Antinori	
[10] A method of manufacturing a mattress comprising:	<p>Antinori describes “[a] method of manufacturing mattresses.” Antinori at Abstract.</p> <p><i>See also:</i></p> <p>“A method of manufacturing mattresses is achieved by providing first and second layers of latex material having different indentation load deflection values.” <i>Id.</i></p> <p>“A novel mattress constructed in accordance with this invention is fabricated from several layers, cores, laminates, or layer portions differing in Indentation Load Deflection (ILD) values.” <i>Id.</i> at 3:21–24.</p>
[10.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;	<p>The method includes providing rectangular foam pieces (<i>i.e.</i>, layer portions 10a and 20b) made of foam latex, which together are shaped and sized to be used as a mattress. Antinori at 2:27–30.</p>

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'935 Patent Claim Chart: Antinori



[Excerpt of Fig. 3]

See also:

“In the simplest form of the invention, two layers of mattress materials, preferably foam latex, are provided which differ from each other in their Indentation Load Deflection (ILD) values.” *Id.* at 2:27–30.

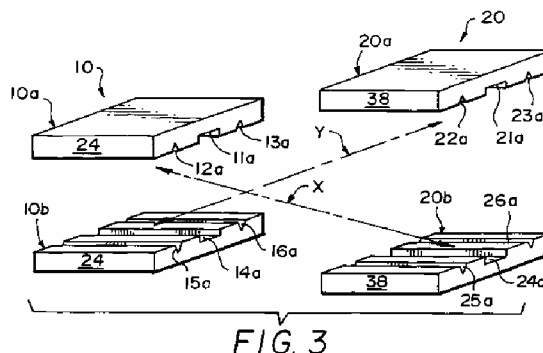


FIG. 3

[10.2] locating a region of the body where increased support is desired;

The method includes locating a region of the body (*i.e.*, under the “postural region of a person” in the center of the mattress) in which to provide “excellent postural support.” Antinori at 4:27–31, 4:44–47, 5:1–7.

See also:

“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of

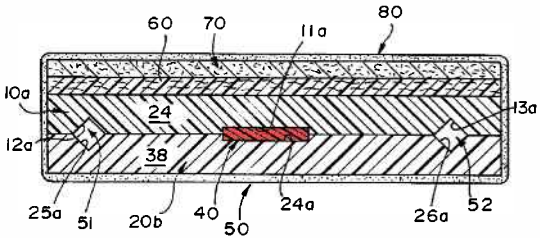
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'935 Patent Claim Chart: Antinori

	<p>differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” <i>Id.</i> at 2:39–51.</p> <p>“The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:28–31.</p> <p>“Furthermore, through the utilization of one or more transverse recesses, such as the recesses 11a, 24a and 14a, 21a, postural support can be firmed in a selective fashion through the insert 30, while the channels or voids 51, 52 provide necessary pressure relief at the head and foot sections, respectively, of the mattress 50.” <i>Id.</i> at 5:1–6.</p>
<p>[10.3] assembling the rectangular foam pieces to form the body having a channel in the region; and</p>	<p>Under Plaintiffs’ interpretation of the claims, Antinori discloses this element. The two rectangular layer portions 10a and 20b are assembled (<i>i.e.</i>, “brought into overlying aligned bonding relationship to each other”) and include “a centrally located transverse rectangularly outwardly opening groove, channel or recess” (11a) in layer portion 10a and an “[i]dential transverse channel[]” (24a) in the layer portion 20b. These channels are formed in the postural region where increased support is desired. Antinori at 4:5–14, 22–27, 37–47.</p> <div> </div> <p>[Excerpt of Fig. 3 (annotated)]</p>

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'935 Patent Claim Chart: Antinori

	<p><i>See also:</i></p> <p>“Double headed broken arrows X, Y in FIG. 3 diagrammatically depict the manner in which the layer portions 10 a, 20 b are cross assembled to each other, as are the layer portions 10 b, 20 a.” <i>Id.</i> at 4:15–18.</p>
<p>[10.4a] affixing at least one insert having planar top and bottom surfaces into the channel,</p>	<p>An insert (40), with planar top and bottom surfaces, is inserted in the recess 24a of the layer portion 20b after the application of adhesive.” Antinori at 4:18–27.</p>  <p><i>See also:</i></p> <p>“Medial recesses receive postural inserts of relatively high ILD values” <i>Id.</i> at Abstract.</p> <p>“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” <i>Id.</i> at 2:39–51.</p> <p>“The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4. The firmer insert 40 affords desired firmness in the postural</p>

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'935 Patent Claim Chart: Antinori	
	region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:22–31.
[10.4b] wherein the channel has a physical shape configured to receive the at least one insert,	<p>The channel (<i>e.g.</i>, 11a and 24a) is shaped to receive insert 40. Antinori at 4:5–14, 22–27, 37–47.</p> <p><i>See also:</i></p> <p>“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” <i>Id.</i> at 2:39–51.</p> <p>“The insert 40 is inserted in the recess 24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4.” <i>Id.</i> at 4:22–27.</p>
[10.4c] the insert having a different mechanical property than the body of foam,	<p>The insert is “firmer” than the foam body (<i>i.e.</i>, has an ILD of 60, compared to the ILDs of 24 and 38 of the two layer portions). Antinori at 3:57–58, 4:18–31.</p> <p><i>See also:</i></p> <p>“For example, the ILD of one layer might be 24, whereas the ILD of a second layer might be 38.” <i>Id.</i> at 2:30–32.</p> <p>“[A]n insert 40 (FIG. 4), preferably latex having a relatively high Indentation Load Deflection (ILD) value, such as ILD 60, is inserted in one of the central recesses 11a, 24a and one of the central recesses 14a, 21a. The insert 40 is inserted in the recess</p>

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'935 Patent Claim Chart: Antinori	
	<p>24a of the layer portion 20b after the application of adhesive to either or both of the opposing surfaces (unnumbered) of the layer portions 10a, 20b which are thereafter brought into overlying aligned bonding relationship to each other, in the manner best illustrated in FIG. 4. The firmer insert 40 affords desired firmness in the postural region of a person P (FIG. 4) lying upon the completed mattress which is generally designated by the reference numeral 50.” <i>Id.</i> at 4:17–31.</p>
[10.4d] and wherein the insert does not entirely fill the channel.	<p>Antinori teaches that “one or more inserts” can be placed in the central recess. If more than one insert is used, each insert would not “entirely fill the channel.” Antinori at 3:10–18. Even where only one insert fills the channel, the use of adhesive would teach a person of ordinary skill in the art that the insert would not fill the entire channel. <i>Id.</i> at 4:22–27.</p> <p><i>See also:</i></p> <p>“An insert or inserts are placed in one or more of the recesses located at the central or medial portions of the layer portions, and a layer portion of 24 ILD value is unitized to a layer portion of 38 ILD value with, of course, the recesses (and insert or inserts) in opposing relationship to each other. Thus, in this fashion, two layers or plies of mattress material of differing ILD values can be manufactured into two mattresses, each of which includes a composite of the two ILD values to achieve the benefits afforded thereby, particularly as supplemented by the inserts located at the medial portions of the laminated mattresses and the voids or recesses located at the opposite ends (head and foot sections thereof).” <i>Id.</i> at 2:39–51.</p> <p>“Furthermore, through the utilization of one or more transverse recesses, such as the recesses 11a, 24a and 14a, 21a, postural support can be firmed in a selective fashion through the insert 40, while the channels or voids 51, 52 provide necessary pressure relief at the head and foot sections, respectively, of the mattress 50. In this fashion, ultimate comfort and long life is achieved at minimum costs.” <i>Id.</i> at 5:1–6.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Antinori, it would be obvious to a person of ordinary skill in the art, as explained below.</p>

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'935 Patent Claim Chart: Antinori	
[13] The method of manufacturing a mattress of claim 10, wherein	<i>See</i> Claim 10, above.
[13.1] affixing at least one insert into the channel comprises applying adhesive, heat, or frictional restraint.	An insert (40), with planar top and bottom surfaces, is inserted in the recess 24a of the layer portion 20b “after the application of adhesive.” Antinori at 4:18–27.

(i) Rebuttal to Plaintiffs’ preliminary injunction arguments

164. In Plaintiffs’ reply brief in support of their Motion for a Preliminary Injunction, Plaintiffs argued that Antinori did not disclose an insert that is “affixed” “within” a “channel.” For the reasons explained above with respect to the ’763 patent, Plaintiffs are incorrect.

165. Plaintiffs argue that the inserts in Antinori are not “affixed” because they are merely “placed” or “inserted” into the channel. D.I. 51 at 22. This is incorrect. The inserts are placed in the channels *after* the application of adhesive. *See* Antinori at 4:22–27. The inserts are then “sandwiched” between the upper and lower layers, which are adhesively bonded to each other. *See id.* at 21–22. This sandwiching (*i.e.*, friction) and use of adhesives permanently affixes the inserts into the channels. There is no suggestion in Antinori that the inserts could ever be removed from the channel.

166. Plaintiffs are also wrong that Antinori does not disclose a “channel.” While Figure 4 of Antinori shows a single recess in the medial section, a person of ordinary skill in the art would understand that Antinori discloses that the single recess and insert shown in Figure 4 could be broken up into smaller, narrower channels, each with its own insert. For example, while Fig. 4A depicts element 11a as being wide, Antinori expressly states that 11a can be shaped as a “groove, channel, or recess.” Antinori also teaches that the mattress can have “one or more” recesses in that region. A person of ordinary skill in the art would thus understand Antinori to disclose a plurality of long, narrow grooves in the medial region of the mattress. *See*

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Antinori at 2:39–43, 3:10–18, 4:5–14. Antinori thus discloses a “channel” under the Court’s definition.

167. Finally, Plaintiffs also argue that the insert in Antinori is not “within” the channel because it is not flush with the top surface of the layer. D.I. 51 at 23–25. I do not understand the word “within” to mean that something must be entirely inside of something else. Indeed, Plaintiffs attempted to inject this limitation into the claims during claim construction but the Court adopted this term’s ordinary meaning. Thus, even if the insert extends beyond the surface, it is still “within” the channel. In any event, Antinori discloses an embodiment where the insert is entirely inside the channel. Plaintiffs focus on the depiction of the mattress in Figure 4, without reading about alternate embodiments disclosed in Antinori. But claims 4 through 6 of Antinori describe embodiments in which the channel is cut only into one layer. A person of ordinary skill in the art would understand that the insert would thus be flush with the top surface of the one layer.

(ii) Obviousness based on Antinori

168. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Antinori, the asserted method claims would have been obvious to a person of ordinary skill in the art in light of Antinori alone, as well as obvious over Antinori in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Antinori with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

169. For example, to the extent it is assumed that Antinori does not expressly or inherently disclose inserts “affixed” in the channels, it would have been obvious to a person of ordinary skill in the art to affix the inserts in the channels. As discussed below, the USPTO has found that affixing using adhesives or heat was an obvious matter of design choice. ’935 FH,

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10/17/2013 Office Action at 2; *see also* '935 FH, 4/9/2014 Office Action at 2; '620 FH, 9/11/2015 Office Action at 6.

170. Furthermore, to the extent that it is assumed that Antinori does not disclose a “channel” under the Court’s claim construction, it would have been obvious to a person of ordinary skill in the art to modify Antinori to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. The idea of affixing inserts into channels (long, narrow grooves) was known in the art well before the Asserted Patents. *See generally supra* Section VIII. It would have been an obvious substitution to make the wider groove shown in Figure 4 of Antinori into several long, narrow grooves. Indeed, as explained above, this configuration is suggested in Antinori itself. Having several long narrow grooves, as opposed to a single, wider recess, allows gradually changing the firmness of the mattress, rather than a drastic, step change in firmness at the edge of the channel. Such long, narrow grooves are expressly shown in references such as Regan, Peinsipp, Kennaway, and GB '433, any one of which a person of ordinary skill in the art would have been motivated to combine with Antinori, with a reasonable expectation of success. *See* Section VIII.E.

1) It would have been obvious to modify Antinori to have inserts that do not entirely fill the channel

171. To the extent Antinori is assumed to not expressly or inherently disclose that the “insert does not entirely fill the channel,” it would have been obvious to a person of ordinary skill in the art to modifying insert 40 in Antinori so that it does not entirely fill recess 24a in order to achieve the claimed invention..

172. For example, configuring an insert to not entirely fill a recess was taught in, *e.g.*, in DE 3937214 (DE '241). As explained in Paragraph 104, DE '241 teaches not entirely filling a channel (either laterally or to its full depth) “in order to produce [a] desired resistance pattern.”

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DE '241 at 8. Indeed, it was known by persons of ordinary skill in the art at the time that foam modification and convolution affects the feel of the mattress—referred to in the art as “surface modification.” Having the foam insert not fill the entire channel would be an obvious design option to selectively create a softer surface for a customer. It would have been obvious to combine the teachings of Antinori with DE '241, as both relate to mattress design and both seek to provide selective firmness over the surface of a mattress.

173. Thus, it would have been obvious in light of Antinori itself, as well as when Antinori is considered with DE '241, for the insert to not entirely fill the channel, as required by claim 10 of the '935 patent.

c. Hoffmann Anticipates and/or Renders Obvious the Asserted Method Claims Under Plaintiffs' Incorrect Claim Interpretation

174. Hoffmann anticipates and/or renders obvious claims 8, 9, 11, and 12 of the '763 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'763 Patent Claim Chart: Hoffmann	
[8] A method of manufacturing a mattress comprising:	<p>Hoffmann relates to the “manufacture” of “a mattress or a mattress core.” Hoffmann at 1:4–26.</p> <p><i>See also:</i></p> <p>“The inventive mattress or mattress core is easy to manufacture.” <i>Id.</i> at 51–53.</p>
[8.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;	<p>Hoffmann teaches providing base member parts 21a and 21b, which are rectangular foam pieces shaped and sized for use as a mattress. Hoffmann at Figure 2.</p> <p><i>See also:</i></p> <p>“The inventive base member can be flexibly utilized in that, for example, with textile coverings, inlays, etc, it can be made into a mattress or designed directly as a mattress.” <i>Id.</i> at 2:20–23.</p> <p>“The base member and the inserts are preferably made of polymeric material, such as polyurethane.” <i>Id.</i> at 2:48–50.</p>

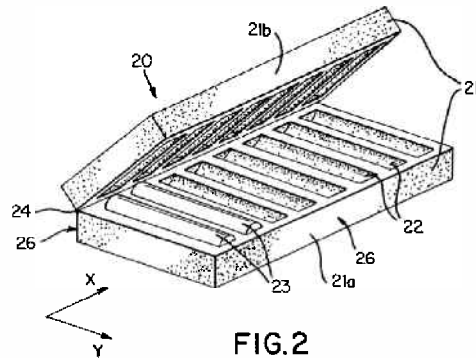
HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Hoffmann**

<p>[8.2] locating a region of the body where increased support is desired;</p>	<p>Hoffmann is directed to the “individual load requirements” of each user, which entails locating a region of the body where increased support is desired. Hoffmann at 1:27.</p> <p><i>See also:</i></p> <p>“Pursuant to a further specific embodiment of the present invention, a set of base members of different hardnesses, especially wear hardnesses, along with a palette of inserts of different degrees of hardness are proposed. This allows a good adaptation to different loads and to individual needs.” <i>Id.</i> at 2:56–60.</p> <p>Hoffmann teaches placing channels and cavities specifically in “the shoulder, pelvic, and foot regions,” “[d]epending upon specific needs.” <i>Id.</i> at 3:28–30, 67.</p>
<p>[8.3] assembling the plurality of rectangular foam pieces to form the body having a channel in the region; and</p>	<p>Under Plaintiffs’ interpretation of the claims, Hoffmann discloses this element. Base member parts 21a and 21b, which are rectangular foam pieces, are assembled to form a body 21 having channels 22 in the region, as depicted in Figure 2.</p> <div> <p style="text-align: center;">FIG. 2</p> </div> <p><i>See also:</i></p> <p>Base member 21 with “transversely directed elongated holes is produced, or the elongated holes are mechanically introduced after the manufacture of a solid base member.” <i>Id.</i> at 1:52–56.</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'763 Patent Claim Chart: Hoffmann**

[8.4] affixing an insert into the channel, the insert having a different firmness than the body of foam.

The inserts are “adapted to be placed into the cavities.” Hoffmann at Abstract. Upon placement of the inserts into the cavities, base member parts 21a and 21b are “connect[ed]” to support the “structural and inherent stability of the base member.” *Id.* at 2:40–44. As such, the inserts are securely affixed within the elongated cavities.



See also:

“The present invention relates to a mattress or mattress core comprising a base member having cavities into which inserts can be placed.” *Id.* at 1:4–6.

The “inserts are distributed into the elongated holes.” *Id.* at 2:45–47.

“The inserts at least in part have different degrees of hardness” from the surrounding mattress. Hoffmann at Abstract.

See also:

“Pursuant to a further specific embodiment of the present invention, a set of base members of different hardnesses, especially wear hardnesses, along with a palette of inserts of different degrees of hardness are proposed.” *Id.* at 2:53–55.

“Depending upon specific needs, inserts [] having the same or different hardness are inserted” into the elongated cavities. *Id.* at 3:28–30.

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'763 Patent Claim Chart: Hoffmann	
	<p>“A mattress or mattress core according to claim 1, wherein at least one of said inserts has elastic properties that are different from an elastic property of said base member.” <i>Id.</i> at 6:11–13.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Hoffmann, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[9] The method of claim 8 wherein	<i>See</i> Claim 8, above.
[9.1] forming the channel comprises cutting foam out of the body.	<p>Base member 21 with “transversely directed elongated holes is produced, or the elongated holes are mechanically introduced after the manufacture of a solid base member.” Hoffmann at 1:52–56. It would be apparent to one of ordinary skill in the art that such “mechanical introduc[tion]” of the channels could be accomplished by cutting foam out of the body. Further, as the Examiner found, the “method of forming the channels whether by cutting or molding is an obvious design choice.” ’763 FH, 8/7/2006 Office Action.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Hoffmann, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[11] The method of claim 8 further comprising	<i>See</i> Claim 8, above.
[11.1] covering the mattress with one or more conventional mattress covering materials.	<p>Hoffmann teaches that “textile coverings” can be used to surround the mattress. Hoffmann at 2:20–23.</p> <p><i>See also:</i></p> <p>“The base member 11 is covered by a sleeve or cover 14 of wool, linen, cotton, mixed fibers, etc.” <i>Id.</i> at 3:11–13.</p> <p>“Any coverings that are present are removed, the base member is opened or lifted up, and the inserts are distributed into the elongated holes.” <i>Id.</i> at 2:45–47.</p>
[12] The method of claim 8 wherein	<i>See</i> Claim 8, above.
[12.1] the size of the insert is substantially equal to the size of the channel.	Hoffmann teaches that “[a]s a rule, the cross-sections of the elongated holes and of the inserts will have the same shape and dimension,” such that the size of the insert is substantially equal to the size of the channel. Hoffmann at 2:1–3.

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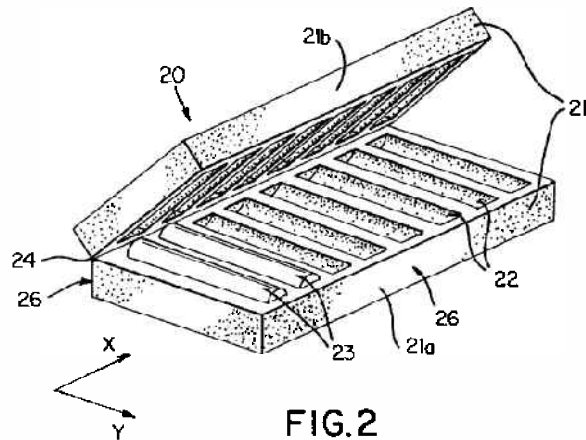
175. Hoffmann anticipates and/or renders obvious claims 5, 6, and 8 of the '173 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'173 Patent Claim Chart: Hoffmann	
[5] A method of manufacturing a mattress comprising:	<p>Hoffmann relates to the “manufacture” of “a mattress or a mattress core.” Hoffmann at 1:4–26.</p> <p><i>See also:</i></p> <p>“The inventive mattress or mattress core is easy to manufacture.” <i>Id.</i> at 51–53.</p>
[5.1] providing a body made of foam shaped and sized for use as a mattress;	<p>Hoffmann teaches providing base member parts 21a and 21b, which are bodies of foam shaped and sized for use as a mattress. Hoffmann at Figure 2.</p> <p><i>See also:</i></p> <p>“The inventive base member can be flexibly utilized in that, for example, with textile coverings, inlays, etc, it can be made into a mattress or designed directly as a mattress.” <i>Id.</i> at 2:20–23.</p> <p>“The base member and the inserts are preferably made of polymeric material, such as polyurethane.” <i>Id.</i> at 48–50.</p>
[5.2] locating a region of the body where increased support is desired;	<p>Hoffmann is directed to the “individual load requirements” of each user, which entails locating a region of the body where increased support is desired. Hoffmann at 1:27.</p> <p><i>See also:</i></p> <p>“Pursuant to a further specific embodiment of the present invention, a set of base members of different hardnesses, especially wear hardnesses, along with a palette of inserts of different degrees of hardness are proposed. This allows a good adaptation to different loads and to individual needs.” <i>Id.</i> at 2:56–60.</p> <p>Hoffmann teaches placing channels and cavities specifically in “the shoulder, pelvic, and foot regions,” “[d]epending upon specific needs.” <i>Id.</i> at 3:28–30, 67.</p>

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[5.3] forming a channel into the body within the region; and

Base member parts 21a and 21b, which are rectangular foam pieces, are assembled to form a body 21 having channels 22 in the region, as depicted in Figure 2.

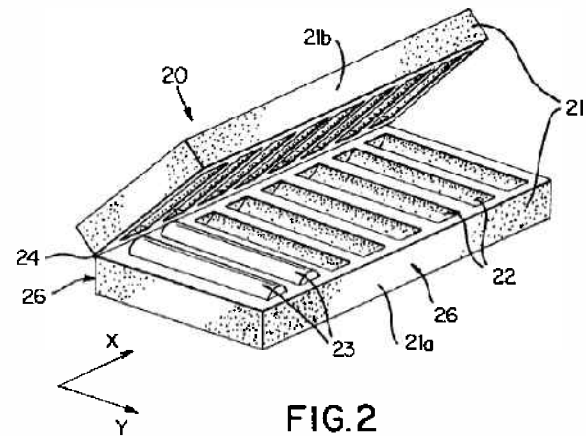


See also:

Base member 21 with “transversely directed elongated holes is produced, or the elongated holes are mechanically introduced after the manufacture of a solid base member.” *Id.* at 1:52–56.

[5.4a] affixing an insert into the channel

The inserts are “adapted to be placed into the cavities.” Hoffmann at Abstract. Upon placement of the inserts into the cavities, base member parts 21a and 21b are “connect[ed]” to support the “structural and inherent stability of the base member.” *Id.* at 2:40–44. As such, the inserts are securely affixed within the elongated cavities.



See also:

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'173 Patent Claim Chart: Hoffmann	
	<p>“The present invention relates to a mattress or mattress core comprising a base member having cavities into which inserts can be placed.” <i>Id.</i> at 1:4–6.</p> <p>The “inserts are distributed into the elongated holes.” <i>Id.</i> at 2:45–47.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Hoffmann, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[5.4b] the insert having a greater firmness than the body of foam;	<p>“The inserts at least in part have different degrees of hardness” from the surrounding mattress, including greater hardness or firmness than the surrounding mattress. A person of ordinary skill in the art would understand Hoffmann to disclose at least one insert having a greater firmness than the surrounding body of foam. Hoffmann at Abstract.</p> <p><i>See also:</i></p> <p>“Pursuant to a further specific embodiment of the present invention, a set of base members of different hardnesses, especially wear hardnesses, along with a palette of inserts of different degrees of hardness are proposed.” <i>Id.</i> at 2:53–55.</p> <p>“Depending upon specific needs, inserts [] having the same or different hardness are inserted” into the elongated cavities. <i>Id.</i> at 3:28–30.</p> <p>“A mattress or mattress core according to claim 1, wherein at least one of said inserts has elastic properties that are different from an elastic property of said base member.” <i>Id.</i> at 6:11–13.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Hoffmann, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[5.5] wherein forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel.	<p>Under Plaintiffs’ interpretation of the claims, Hoffmann discloses this element. Base member parts 21a and 21b, which are rectangular foam pieces, are assembled to form a body 21 having channels 22 in the region, as depicted in Figure 2.</p>

FIG. 2

Base member 21 with “transversely directed elongated holes is produced, or the elongated holes are mechanically introduced after the manufacture of a solid base member.” *Id.* at 1:52–56.

See Claim 5, above.

Base member 21 with “transversely directed elongated holes is produced, or the elongated holes are mechanically introduced after the manufacture of a solid base member.” Hoffmann at 1:52–56. It would be apparent to one of ordinary skill in the art that such “mechanical introduc[tion]” of the channels could be accomplished by cutting foam out of the body. Further, as the Examiner found, the “method of forming the channels whether by cutting or molding is an obvious design choice.” ’763 FH, 8/7/2006 Office Action.

To the extent this limitation is not expressly or inherently disclosed in Hoffmann, it would be obvious to a person of ordinary skill in the art, as explained below.

See Claim 5, above.

Hoffmann teaches that “textile coverings” can be used to surround the mattress. Hoffmann at 2:20–23.

“The base member 11 is covered by a sleeve or cover 14 of wool, linen, cotton, mixed fibers, etc.” *Id.* at 3:11–13.

“Any coverings that are present are removed, the base member is opened or lifted up, and the inserts are distributed into the elongated holes.” *Id.* at 2:45–47.

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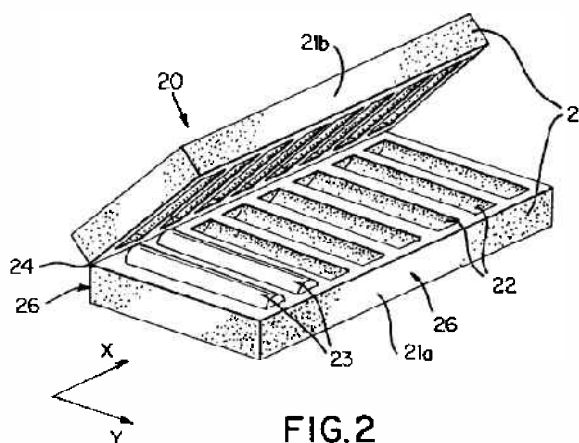
176. Hoffmann anticipates and/or renders obvious claims 10 and 13 of the '935 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'935 Patent Claim Chart: Hoffmann	
[10] A method of manufacturing a mattress comprising:	<p>Hoffmann relates to the “manufacture” of “a mattress or a mattress core.” Hoffmann at 1:4–26.</p> <p><i>See also:</i></p> <p>“The inventive mattress or mattress core is easy to manufacture.” <i>Id.</i> at 51–53.</p>
[10.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;	<p>Hoffmann teaches providing base member parts 21a and 21b, which are rectangular foam pieces shaped and sized for use as a mattress. Hoffmann at Figure 2.</p> <p><i>See also:</i></p> <p>“The inventive base member can be flexibly utilized in that, for example, with textile coverings, inlays, etc, it can be made into a mattress or designed directly as a mattress.” <i>Id.</i> at 2:20–23.</p> <p>“The base member and the inserts are preferably made of polymeric material, such as polyurethane.” <i>Id.</i> at 48–50.</p>
[10.2] locating a region of the body where increased support is desired;	<p>Hoffmann is directed to the “individual load requirements” of each user, which entails locating a region of the body where increased support is desired. Hoffmann at 1:27.</p> <p><i>See also:</i></p> <p>“Pursuant to a further specific embodiment of the present invention, a set of base members of different hardnesses, especially wear hardnesses, along with a palette of inserts of different degrees of hardness are proposed. This allows a good adaptation to different loads and to individual needs.” <i>Id.</i> at 2:56–60.</p> <p>Hoffmann teaches placing channels and cavities specifically in “the shoulder, pelvic, and foot regions,” “[d]epending upon specific needs.” <i>Id.</i> at 3:28–30, 67.</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'935 Patent Claim Chart: Hoffmann**

[10.3] assembling the rectangular foam pieces to form the body having a channel in the region; and

Under Plaintiffs' interpretation of the claims, Hoffmann discloses this element. Base member parts 21a and 21b, which are rectangular foam pieces, are assembled to form a body 21 having channels 22 in the region, as depicted in Figure 2.

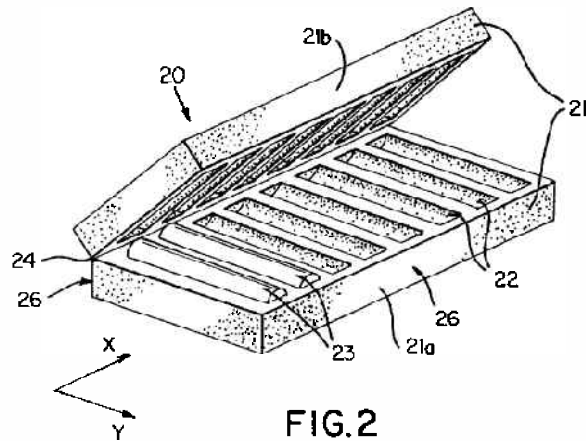


See also:

Base member 21 with “transversely directed elongated holes is produced, or the elongated holes are mechanically introduced after the manufacture of a solid base member.” *Id.* at 1:52–56.

[10.4a] affixing at least one insert having planar top and bottom surfaces into the channel,

The inserts 23 can have planar top and bottom surfaces, and are “adapted to be placed into the cavities.” Hoffmann at Abstract. Hoffmann specifically teaches that the “elongated cavities”—*i.e.*, channels—can be “cylindrical with a round cross-section,” as depicted in Figure 2, or they can have “rectangular, oval, polygonal, or other cross-sections.” *Id.* at 4:4–6. Upon placement of the inserts into the cavities, base member parts 21a and 21b are “connect[ed]” to support the “structural and inherent stability of the base member.” *Id.* at 2:40–44. As such, the inserts are securely affixed within the elongated cavities.

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See also:

“The present invention relates to a mattress or mattress core comprising a base member having cavities into which inserts can be placed.” *Id.* at 1:4–6.

The “inserts are distributed into the elongated holes.” *Id.* at 2:45–47.

To the extent this limitation is not expressly or inherently disclosed in Hoffmann, it would be obvious to a person of ordinary skill in the art, as explained below.

[10.4b] wherein the channel has a physical shape configured to receive the at least one insert,

Hoffmann teaches that “[a]s a rule, the cross-sections of the elongated holes and of the inserts will have the same shape and dimension,” such that the channel is configured to receive the correspondingly shaped insert. Hoffmann at 2:1–3.

[10.4c] the insert having a different mechanical property than the body of foam,

“The inserts at least in part have different degrees of hardness” from the surrounding mattress. Hoffmann at Abstract.

See also:

“Pursuant to a further specific embodiment of the present invention, a set of base members of different hardnesses, especially wear hardnesses, along with a palette of inserts of different degrees of hardness are proposed.” *Id.* at 2:53–55.

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'935 Patent Claim Chart: Hoffmann	
	<p>“Depending upon specific needs, inserts [] having the same or different hardness are inserted” into the elongated cavities. <i>Id.</i> at 3:28–30.</p> <p>“A mattress or mattress core according to claim 1, wherein at least one of said inserts has elastic properties that are different from an elastic property of said base member.” <i>Id.</i> at 6:11–13.</p>
[10.4d] and wherein the insert does not entirely fill the channel.	Hoffmann teaches that in certain embodiments, “gaps” could “remain between the insert 43a and the elongated hole 42” such that the inserts do not entirely fill the channels. Hoffmann at 4:8–11.
[13] The method of manufacturing a mattress of claim 10, wherein	<i>See</i> Claim 10, above.
[13.1] affixing at least one insert into the channel comprises applying adhesive, heat, or frictional restraint.	Hoffmann teaches that the “inserts 23 are [] received in the elongated holes 22,” as depicted in Figure 2, such that the frictional restraint of the “closed surface” of the channels when base member parts 21a and 21b are connected affixes the inserts securely within the channels. Hoffmann at 3:37–43.

(i) Obviousness based on Hoffmann

177. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Hoffmann, the asserted method claims would have been obvious to a person of ordinary skill in the art in light of Hoffmann alone, as well as obvious over Hoffmann in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Hoffmann with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

1) It would have been obvious to modify Hoffmann to affix inserts in its channels using adhesive, heat, or frictional restraint

178. To the extent Hoffmann is assumed not to expressly or inherently disclose “affixing” an insert, such as by adhesive, heat, or frictional restraint, it would have been obvious

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to modify Hoffmann to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. The idea of affixing inserts into channels was known in the art well before the Asserted Patents. *See generally supra* Section VIII. Indeed, the USPTO has found that affixing using adhesives or heat was an obvious matter of design choice. '935 FH, 10/17/2013 Office Action at 2; *see also* '935 FH, 4/9/2014 Office Action at 2; '620 FH, 9/11/2015 Office Action at 6. References such as Antinori disclose using adhesives to secure an insert in a channel. *See* Antinori at 4:22–27. It would have been obvious to a person of ordinary skill in the art to secure the inserts in Hoffmann using adhesives, or any other known method of affixing inserts. This would have led to predictable results, such as a higher quality mattress that would withstand repeated use.

2) It would have been obvious to modify Hoffmann to make the insert have a greater firmness than the body of foam

179. To the extent Hoffmann is assumed not to expressly or inherently disclose “the insert having a greater firmness than the body of foam,” it would have been obvious to modify Hoffmann to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. Hoffmann teaches a mattress with “at least two” cavities and corresponding inserts. Hoffmann at Abstract, 1:45–50. One potential configuration of inserts, which would be obvious to try to a person of ordinary skill in the art, would be to have at least one insert have a firmness greater than the surrounding foam. This feature is taught in several prior art patents, including Regan, which discloses using firmer inserts in “the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight.” Regan at Abstract. A person of ordinary skill in the art would have a reasonable expectation of success in implementing Hoffmann in a similar manner. *See infra* Section VIII.E.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**3) It would have been obvious to modify Hoffmann to cut foam out of the body**

180. To the extent Hoffmann is assumed not to expressly or inherently disclose “forming the channel comprises cutting foam out of the body,” it would have been obvious to modify Hoffmann to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. Base member 21 with “transversely directed elongated holes is produced, or the elongated holes are mechanically introduced after the manufacture of a solid base member.” Hoffmann at 1:52–56. It would be apparent to one of ordinary skill in the art that such “mechanical introduc[tion]” of the channels could be accomplished by cutting foam out of the body. Indeed, as the USPTO found, the “method of forming the channels whether by cutting or molding is an obvious design choice.” ’763 FH, 8/7/2006 Office Action at 4; ’173 FH, 7/31/2003 Office Action at 2 (“The method of forming the channels whether by cutting or molding is an obvious matter of design choice.”).

d. Kennaway Anticipates and/or Renders Obvious the Asserted Method Claims Under Plaintiffs’ Incorrect Claim Interpretation

181. Kennaway anticipates and/or renders obvious claims 8, 9, 11, and 12 of the ’763 patent under Plaintiffs’ incorrect claim interpretation, as shown below:

’763 Patent Claim Chart: Kennaway	
[8] A method of manufacturing a mattress comprising:	Kennaway is related to “a mattress which has adjustable resilience and which is relatively cheap and simple to manufacture.” Kennaway at 2:19–21.
[8.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;	Kennaway teaches providing an “internal body”—main foam section 8—made of “foam material,” which includes “a plurality of foam sections of at least two different hardnesses,” and a “cover surrounding the body,” both of which are rectangular foam pieces shaped and sized for use as a mattress, as depicted in Figure 4. Kennaway at 2:22–28.

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'763 Patent Claim Chart: Kennaway

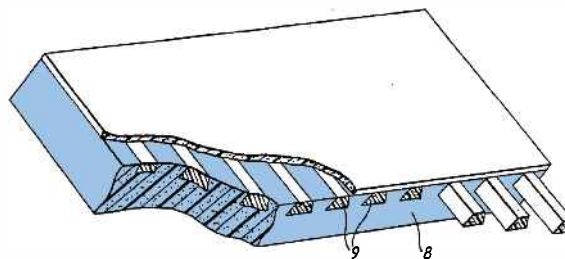


Fig.4.

See also:

Kennaway also teaches the inclusion of a “base layer” and “upper soft foam layer,” not depicted in the Figures. *Id.* at 5:1–5.

[8.2] locating a region of the body where increased support is desired;

Kennaway teaches a mattress “intended primarily for orthopaedic use,” which “can be altered to suit a variety of different patient conditions” by arranging inserts of “a wide range of hardnesses and arranging them in a predetermined pattern to obtain the required hardness distribution.” Kennaway at Abstract.

[8.3] assembling the plurality of rectangular foam pieces to form the body having a channel in the region; and

Under Plaintiffs’ interpretation of the claims, Kennaway discloses this element. Kennaway discloses that main foam section 8—the “internal body”—is layered with the “cover surrounding the body” and any additional “base” or “upper soft foam layers.” Kennaway at 2:19–27.

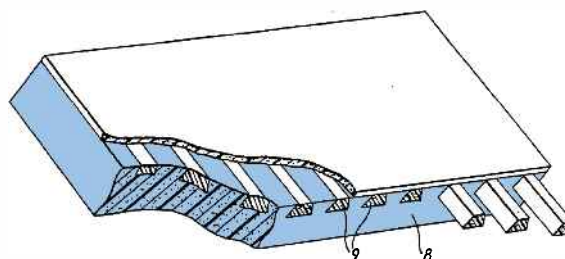
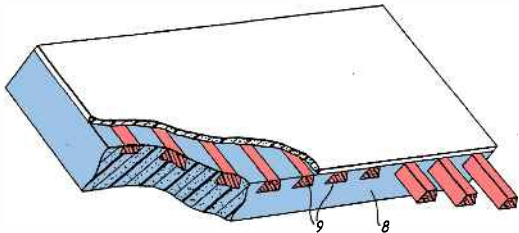


Fig.4.

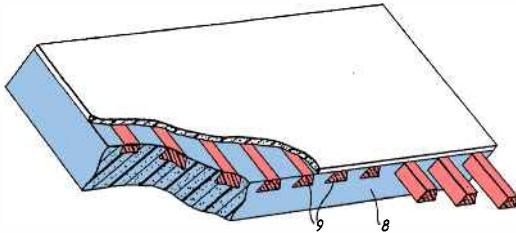
[8.4] affixing an insert into the channel, the insert having a different firmness than the body of foam.

The mattress “has a main foam section 8 with a series of parallel transversely extending channel voids filled by corresponding shaped removable elongate insert sections 9.” Kennaway at 6:24–28. The inserts are “inserted in voids formed in the main section,” *id.* at 9:9–11—*i.e.*, they are “fitted in voids in the main section.” *Id.* at 3:21.

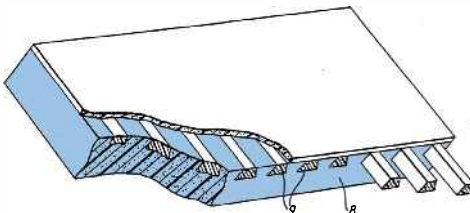
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'763 Patent Claim Chart: Kennaway	
	 <p style="text-align: center;">Fig.4.</p> <p>The insert sections 9 have “different hardness or hardnesses” to reinforce the body. Kennaway explains that the “channel voids” (<i>i.e.</i>, channels) are “filled by corresponding shaped removable elongated inserts sections 9 of a different hardness or hardnesses.” Kennaway at 6:26–29. Inserts that “fill[]” a channel and are “corresponding[ly] shaped” to the channel will help reinforce the body.</p>
[9] The method of claim 8 wherein	<i>See Claim 8, above.</i>
[9.1] forming the channel comprises cutting foam out of the body.	<p>Kennaway teaches that it was known in the art to “make perforations” in the foam. Kennaway at 2:15. It would be understood by one of ordinary skill in the art that such “perforations” can be done by cutting.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Kennaway, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[11] The method of claim 8 further comprising	<i>See Claim 8, above.</i>
[11.1] covering the mattress with one or more conventional mattress covering materials.	The mattress contains “a flexible cover surrounding the body.” Kennaway at 2:24.
[12] The method of claim 8 wherein	<i>See Claim 8, above.</i>
[12.1] the size of the insert is substantially equal to the size of the channel.	Kennaway teaches that the channels are “filled by corresponding shaped removable elongate insert sections 9 of a different hardness or hardnesses.” Kennaway at 6:26–28. Insert sections 9 are thus substantially equal in size and shape to the channels, as depicted in Figure 4.

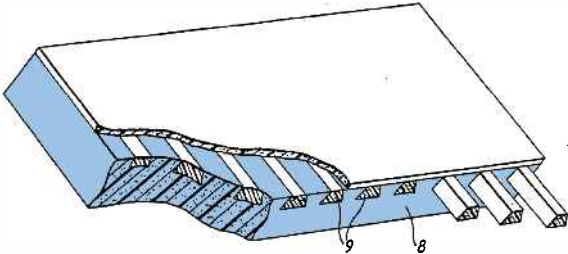
HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY

'763 Patent Claim Chart: Kennaway	
	 <p>Fig.4.</p>

182. Kennaway anticipates and/or renders obvious claims 5, 6, and 8 of the '173 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'173 Patent Claim Chart: Kennaway	
[5] A method of manufacturing a mattress comprising:	Kennaway is related to "a mattress which has adjustable resilience and which is relatively cheap and simple to manufacture." Kennaway at 2:19–21.
[5.1] providing a body made of foam shaped and sized for use as a mattress;	<p>Kennaway teaches providing an "internal body"—main foam section 8—made of "foam material," which includes "a plurality of foam sections of at least two different hardnesses," which is shaped and sized for use as a mattress, as depicted in Figure 4. Kennaway at 2:22–28.</p>  <p>Fig.4.</p> <p><i>See also:</i></p> <p>Kennaway also teaches the inclusion of a "base layer" and "upper soft foam layer," not depicted in the Figures. <i>Id.</i> at 5:1–5.</p>
[5.2] locating a region of the body where increased support is desired;	Kennaway teaches a mattress "intended primarily for orthopaedic use," which "can be altered to suit a variety of different patient conditions" by arranging inserts of "a wide range of hardnesses and arranging them in a predetermined pattern to obtain the required hardness distribution." Kennaway at Abstract.

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'173 Patent Claim Chart: Kennaway	
<p>[5.3] forming a channel into the body within the region; and</p>	<p>The top surface of main foam section 8 has “a series of parallel transversely extending channel voids.” Kennaway at 6:24–28; <i>see also id.</i> at 7:1–4.</p> <p>The court construed “channel” as “a long, narrow groove.” The “parallel transversely extending channel voids” are long, narrow grooves.</p>  <p style="text-align: center;">Fig.4.</p>
<p>[5.4a] affixing an insert into the channel</p>	<p>The mattress “has a main foam section 8 with a series of parallel transversely extending channel voids filled by corresponding shaped removable elongate insert sections 9.” Kennaway at 6:24–28. The inserts are “inserted in voids formed in the main section,” <i>id.</i> at 9:9–11—<i>i.e.</i>, they are “fitted in voids in the main section.” <i>Id.</i> at 3:21.</p>
<p>[5.4b] the insert having a greater firmness than the body of foam;</p>	<p>The insert sections 9 have “different hardness or hardnesses,” including greater hardness, to reinforce the body. Kennaway explains that the “channel voids” (<i>i.e.</i>, channels) are “filled by corresponding shaped removable elongated inserts sections 9 of a different hardness or hardnesses.” Kennaway at 6:26–29. Inserts that “fill[]” a channel and are “corresponding[ly] shaped” to the channel will help reinforce the body. Figures 2a, 2b, 2c & 3 show some possible arrangements of inserts of greater firmness than the surrounding foam to reinforce the body.</p>
<p>[5.5] wherein forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel.</p>	<p>Under Plaintiffs’ interpretation of the claims, Kennaway discloses this element. Kennaway discloses that main foam section 8—the “internal body”—is layered with the “cover surrounding the body” and any additional “base” or “upper soft foam layers.” Kennaway at 2:19–27.</p>

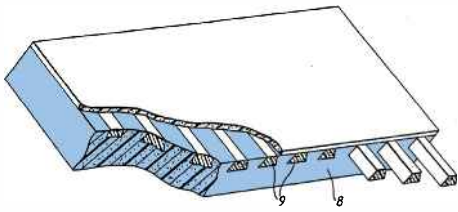
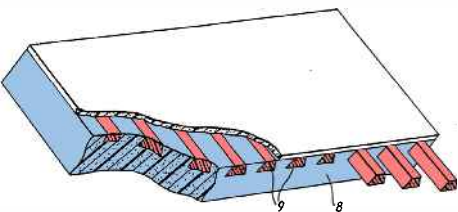
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'173 Patent Claim Chart: Kennaway	
[6] The method of claim 5	<i>See</i> Claim 5, above.
[6.1] wherein forming the channel further comprises cutting foam out of the body.	<p>Kennaway teaches that it was known in the art to “make perforations” in the foam. Kennaway at 2:15. It would be understood by one of ordinary skill in the art that such “perforations” can be done by cutting.</p> <p>To the extent this limitation is not expressly or inherently disclosed in Kennaway, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[8] The method of claim 5 further comprising	<i>See</i> Claim 5, above.
[8.1] covering the mattress with one or more conventional mattress covering materials.	The mattress contains “a flexible cover surrounding the body.” Kennaway at 2:24.

183. Kennaway anticipates and/or renders obvious claims 10 and 13 of the '935 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'935 Patent Claim Chart: Kennaway	
[10] A method of manufacturing a mattress comprising:	Kennaway is related to “a mattress which has adjustable resilience and which is relatively cheap and simple to manufacture.” Kennaway at 2:19–21.
[10.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;	<p>Kennaway teaches providing an “internal body”—main foam section 8—made of “foam material,” which includes “a plurality of foam sections of at least two different hardnesses,” and a “cover surrounding the body,” both of which are rectangular foam pieces shaped and sized for use as a mattress, as depicted in Figure 4. Kennaway at 2:22–28.</p> <div> <p style="text-align: center;">Fig.4.</p> </div> <p><i>See also:</i></p>

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'935 Patent Claim Chart: Kennaway	
	Kennaway also teaches the inclusion of a “base layer” and “upper soft foam layer,” not depicted in the Figures. <i>Id.</i> at 5:1–5.
[10.2] locating a region of the body where increased support is desired;	Kennaway teaches a mattress “intended primarily for orthopaedic use,” which “can be altered to suit a variety of different patient conditions” by arranging inserts of “a wide range of hardnesses and arranging them in a predetermined pattern to obtain the required hardness distribution.” Kennaway at Abstract.
[10.3] assembling the rectangular foam pieces to form the body having a channel in the region; and	Under Plaintiffs’ interpretation of the claims, Kennaway discloses this element. Kennaway discloses that main foam section 8—the “internal body”—is layered with the “cover surrounding the body” and any additional “base” or “upper soft foam layers.” Kennaway at 2:19–27.  Fig.4.
[10.4a] affixing at least one insert having planar top and bottom surfaces into the channel,	The mattress “has a main foam section 8 with a series of parallel transversely extending channel voids filled by corresponding shaped removable elongate insert sections 9.” Kennaway at 6:24–28. The inserts are “inserted in voids formed in the main section,” <i>id.</i> at 9:9–11— <i>i.e.</i> , they are “fitted in voids in the main section.” <i>Id.</i> at 3:21. The insert sections 9 have planar top and bottom surfaces, as depicted in Figure 4.
[10.4b] wherein the channel has a physical shape configured to receive the at least one insert,	Kennaway teaches that the channels are “filled by corresponding shaped removable elongate insert sections 9 of a different hardness or hardnesses.” Kennaway at 6:26–28. The channels thus have a physical size and shape configured to receive the insert sections 9, as depicted in Figure 4.  Fig.4.

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'935 Patent Claim Chart: Kennaway	
[10.4c] the insert having a different mechanical property than the body of foam,	The insert sections 9 have “different hardness or hardnesses” to reinforce the body. Kennaway explains that the “channel voids” (<i>i.e.</i> , channels) are “filled by corresponding shaped removable elongated inserts sections 9 of a different hardness or hardnesses.” Kennaway at 6:26–29. Inserts that “fill[]” a channel and are “corresponding[ly] shaped” to the channel will help reinforce the body.
[10.4d] and wherein the insert does not entirely fill the channel.	Kennaway does not state that the removable elongate insert sections fill the entire channel voids. <i>See</i> Kennaway at 6:19–29. To the extent this limitation is not expressly or inherently disclosed in Kennaway, it would be obvious to a person of ordinary skill in the art, as explained below.
[13] The method of manufacturing a mattress of claim 10, wherein	<i>See</i> Claim 10, above.
[13.1] affixing at least one insert into the channel comprises applying adhesive, heat, or frictional restraint.	A person of ordinary skill in the art would understand that the insert sections in Kennaway are secured in place at least by frictional restraint. To the extent this limitation is not expressly or inherently disclosed in Kennaway, it would be obvious to a person of ordinary skill in the art, as explained below.

(i) Obviousness based on Kennaway

184. To the extent any of the limitations of these claims are not expressly or inherently disclosed in Kennaway, the asserted method claims would have been obvious to a person of ordinary skill in the art in light of Kennaway alone, as well as obvious over Kennaway in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine Kennaway with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**1) It would have been obvious to modify Kennaway to affix inserts in its channels using adhesive, heat, or frictional restraint**

185. To the extent Kennaway is assumed not to expressly or inherently disclose “affixing” an insert, such as by adhesive, heat, or frictional restraint, it would have been obvious to modify Kennaway to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. The idea of affixing inserts into channels was known in the art well before the Asserted Patents. *See generally supra* Section VIII. Indeed, the USPTO has found that affixing using adhesives or heat was an obvious matter of design choice. ’935 FH, 10/17/2013 Office Action at 2; *see also* ’935 FH, 4/9/2014 Office Action at 2; ’620 FH, 9/11/2015 Office Action at 6. References such as Antinori disclose using adhesives to secure an insert in a channel. *See* Antinori at 4:22–27. It would have been obvious to a person of ordinary skill in the art to secure the inserts in Kennaway using adhesives, or any other known method of affixing inserts. This would have led to predictable results, such as a higher quality mattress that would withstand repeated use.

2) It would have been obvious to modify Kennaway to have inserts that do not entirely fill the channel

186. To the extent Kennaway is assumed not to expressly or inherently disclose that the “insert does not entirely fill the channel” as required by claim 10 of the ’935 patent, modifying the elongate inserts in Kennaway so they do not entirely fill the cavities would be an obvious modification to a person of ordinary skill in the art to achieve the claimed invention.

187. For example, configuring an insert to not entirely fill a recess was taught in, *e.g.*, in DE 3937214 (DE ’214). As explained above, DE ’214 teaches not entirely filling a channel (either laterally or to its full depth) “in order to produce [a] desired resistance pattern.” DE ’214 at 8. Indeed, it was known by persons of ordinary skill in the art at the time that foam modification and convolution affects the feel of the mattress—referred to in the art as “surface

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modification.” Having the foam insert not fill the entire channel would be an obvious design option to selectively create the desired firmness profile on the surface of the mattress. It would have been obvious to combine the teachings of Kennaway with DE ’214, as both relate to mattress design and both seek to provide selective firmness over the surface of a mattress.

188. Thus, it would have been obvious to modify Kennaway so that the inserts do not entirely fill the channel, as required by claim 10 of the ’935 patent.

3) It would have been obvious to modify Kennaway to cut foam out of the body

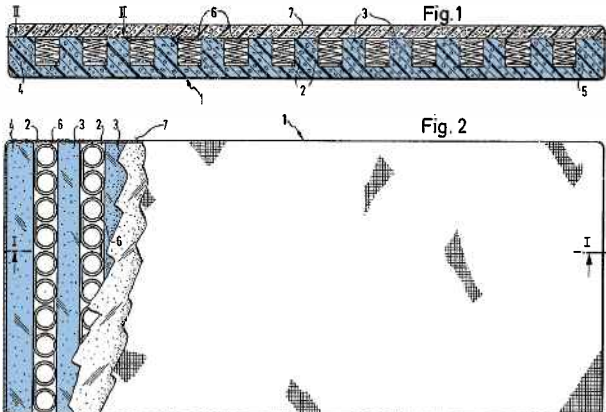
189. To the extent Kennaway is assumed not to expressly or inherently disclose “forming the channel comprises cutting foam out of the body,” it would have been obvious to modify Kennaway to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. It would be apparent to a person of ordinary skill in the art that the “parallel transversely extending channel voids” in Kennaway could be accomplished by cutting foam out of the body. Indeed, as the USPTO found, the “method of forming the channels whether by cutting or molding is an obvious design choice.” ’763 FH, 8/7/2006 Office Action at 4; ’173 FH, 7/31/2003 Office Action at 2 (“The method of forming the channels whether by cutting or molding is an obvious matter of design choice.”).

e. GB ’433 Anticipates and/or Renders Obvious the Asserted Method Claims Under Plaintiffs’ Incorrect Claim Interpretation

190. GB ’433 anticipates and/or renders obvious claims 8, 9, 11, and 12 of the ’763 patent under Plaintiffs’ incorrect claim interpretation, as shown below:

’763 Patent Claim Chart: GB ’433	
[8] A method of manufacturing a mattress comprising:	GB ’433 is related to “manufacturing” of “mattresses of which a major part is formed from a foamed polymeric material.” GB ’433 at 1:13–14, 83; 2:56.

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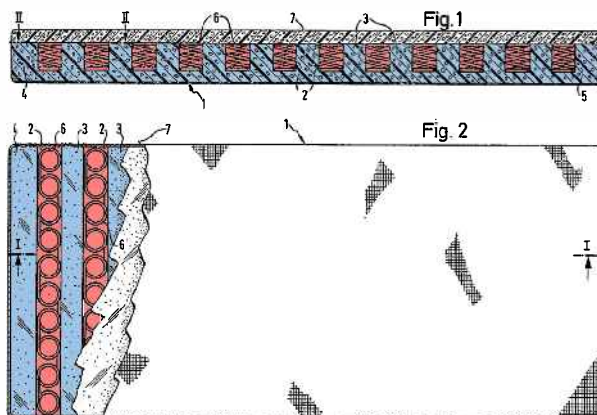
'763 Patent Claim Chart: GB '433	
	<p><i>See also:</i></p> <p>The “mattress . . . may be manufactured from a so-called hot foam.” <i>Id.</i> at 3:25–26.</p>
<p>[8.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;</p>	<p>GB '433 provides that “mattress underbody 1,” which is a “body of foamed polymeric material,” along with “an intermediate layer of foam and a covering material disposed over that layer,” are combined to form a mattress “body”—<i>i.e.</i>, a “physical structure.” GB '433 at 1:96; 3:95–100. Mattress underbody 1 and the intermediate layer of foam are rectangular foam pieces shaped and sized for use as a mattress, as depicted in Figures 1 and 2.</p> 
<p>[8.2] locating a region of the body where increased support is desired;</p>	<p>GB '433 teaches that the “continuous wire spring elements 6”—<i>i.e.</i>, inserts—together with the “fixed foam webs” are strategically placed throughout the mattress body to “act as an additional reinforcement” to the mattress body and provide increased support. GB '433 at 2:85–95; 3:69–74.</p>
<p>[8.3] assembling the plurality of rectangular foam pieces to form the body having a channel in the region; and</p>	<p>Under Plaintiffs’ interpretation of the claims, GB '433 discloses this element. GB '433 discloses a construction wherein “mattress underbody 1,” which contains “a number of channels 2 extending transversely of the length of the mattress,” is layered with the “intermediate layer of foam and a covering material disposed over that layer.” GB '433 at 1:96; 3:95–100.</p>

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'763 Patent Claim Chart: GB '433

[8.4] affixing an insert into the channel, the insert having a different firmness than the body of foam.

“[I]nto the channels of the foam mattress underbody 1 thus produced there are inserted continuous wire spring elements 6 . . .” GB '433 at 3:69–74. The inserts are “held on two sides by the fixed foam webs.” *Id.* at 2:85–88.



See also:

“According to the present invention there is provided a mattress or the like comprising a body of foamed polymeric material provided in one face thereof with a plurality of substantially parallel channels separated by webs therebetween, each said channel running completely across the width or the length of said body, being open at each end, and having a depth taking up a major portion of the thickness of said body . . . and a plurality of springs which lie adjacent one another within each said channel . . .” *Id.* at 1:63–79.

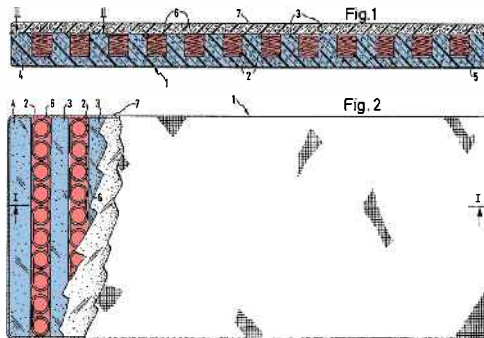
“[C]ontinuous wire spring elements” (*i.e.*, inserts) are “put into the channels” and secured from above by “the padding layer” which is “glue[d] on.” *Id.* at 2:114–116.

GB '433 teaches that the “continuous wire spring elements 6”—*i.e.*, inserts—together with the “fixed foam webs” are strategically placed throughout the mattress body to “act as an additional reinforcement” to the mattress body and provide increased support. GB '433 at 2:85–95; 3:69–74.

[9] The method of claim 8 wherein

See Claim 8, above.

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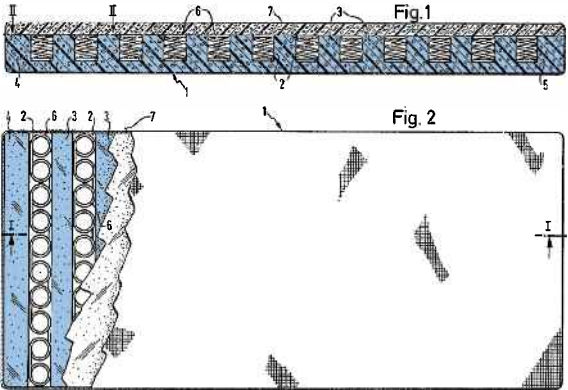
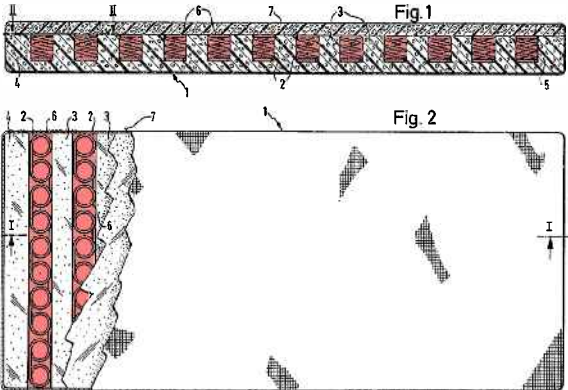
'763 Patent Claim Chart: GB '433	
[9.1] forming the channel comprises cutting foam out of the body.	GB '433 teaches “using a known cutting instrument . . . in such a way that the cutting instrument moves through this foam pad in a longitudinal direction across the entire width thereof, following the contour of the desired channels and webs.” GB '433 at 2:22–30.
[11] The method of claim 8 further comprising	<i>See</i> Claim 8, above.
[11.1] covering the mattress with one or more conventional mattress covering materials.	The mattress contains a “covering material” which “may be a base cover of plain material for the entire mattress which is then covered in the usual manner in a further attractive covering material.” GB '433 at 3:95–105.
[12] The method of claim 8 wherein	<i>See</i> Claim 8, above.
[12.1] the size of the insert is substantially equal to the size of the channel.	<p>The “continuous wire spring elements 6” are substantially equal to the size of the channels, as depicted in Figures 1 and 2.</p> 

191. GB '433 anticipates and/or renders obvious claims 5, 6, and 8 of the '173 patent under Plaintiffs' incorrect claim interpretation, as shown below:

'173 Patent Claim Chart: GB '433	
[5] A method of manufacturing a mattress comprising:	<p>GB '433 is related to “manufacturing” of “mattresses of which a major part is formed from a foamed polymeric material.” GB '433 at 1:13–14, 83; 2:56.</p> <p><i>See also:</i></p> <p>The “mattress . . . may be manufactured from a so-called hot foam.” <i>Id.</i> at 3:25–26.</p>

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'173 Patent Claim Chart: GB '433

<p>[5.1] providing a body made of foam shaped and sized for use as a mattress;</p>	<p>GB '433 provides that “mattress underbody 1,” which is a “body of foamed polymeric material,” along with “an intermediate layer of foam and a covering material disposed over that layer,” are combined to form a mattress “body”—<i>i.e.</i>, a “physical structure.” GB '433 at 1:96; 3:95–100. Mattress underbody 1 and the intermediate layer of foam are rectangular foam pieces shaped and sized for use as a mattress, as depicted in Figures 1 and 2.</p>  <p>Fig. 1 is a cross-sectional view of a mattress body showing layers 1, 2, 3, 4, 5, 6, 7, and 8. Fig. 2 is a perspective view of the mattress body showing the arrangement of the layers and the channels 2.</p>
<p>[5.2] locating a region of the body where increased support is desired;</p>	<p>GB '433 teaches that the “continuous wire spring elements 6”—<i>i.e.</i>, inserts—together with the “fixed foam webs” are strategically placed throughout the mattress body to “act as an additional reinforcement” to the mattress body and provide increased support. GB '433 at 2:85–95; 3:69–74.</p>
<p>[5.3] forming a channel into the body within the region; and</p>	<p>The top surface of underbody 1 “has a number of channels 2 extending transversely of the length of the mattress and arranged parallel to each other.” GB '433 at 3:24–31.</p> <p>The court construed “channel” as “a long, narrow groove.” The transversely extending channels in GB '433 are long, narrow grooves.</p>  <p>Fig. 1 is a cross-sectional view of a mattress body showing layers 1, 2, 3, 4, 5, 6, 7, and 8. Fig. 2 is a perspective view of the mattress body showing the arrangement of the layers and the channels 2.</p>

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'173 Patent Claim Chart: GB '433

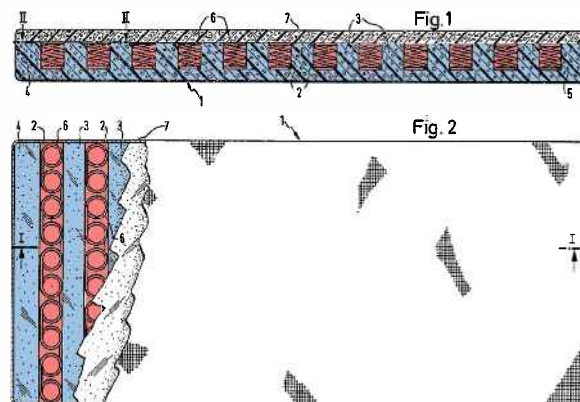
The channels extend perpendicularly into the underbody from its surface: “a plurality of substantially parallel channels . . . having a depth taking up a major portion of the thickness of said body.” *Id.* at 1:67–71.

See also:

“The body of foamed polymeric material has a plurality of cut-out parallel channels extending over the entire length, or preferably over the entire width, of the body and separated from each other by webs of the polymeric material.” *Id.* at 1:96–2:5.

[5.4a] affixing an insert into the channel

“[I]nto the channels of the foam mattress underbody 1 thus produced there are inserted continuous wire spring elements 6 . . .” GB '433 at 3:69–74. The inserts are “held on two sides by the fixed foam webs.” *Id.* at 2:85–88.



See also:

“According to the present invention there is provided a mattress or the like comprising a body of foamed polymeric material provided in one face thereof with a plurality of substantially parallel channels separated by webs therebetween, each said channel running completely across the width or the length of said body, being open at each end, and having a depth taking up a major portion of the thickness of said body . . . and a plurality of springs which lie adjacent one another within each said channel . . .” *Id.* at 1:63–79.

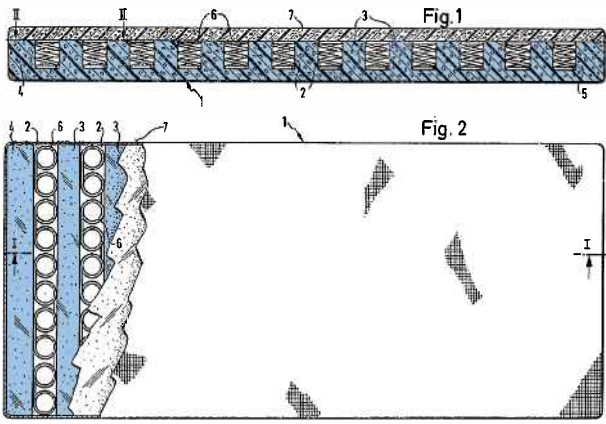
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'173 Patent Claim Chart: GB '433	
	"[C]ontinuous wire spring elements" (<i>i.e.</i> , inserts) are "put into the channels" and secured from above by "the padding layer" which is "glue[d] on." <i>Id.</i> at 2:114–116.
[5.4b] the insert having a greater firmness than the body of foam;	GB '433 teaches that the "continuous wire spring elements 6"— <i>i.e.</i> , inserts—together with the "fixed foam webs" are strategically placed throughout the mattress body to "act as an additional reinforcement" to the mattress body and provide increased support. GB '433 at 2:85–95; 3:69–74.
[5.5] wherein forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel.	Under Plaintiffs' interpretation of the claims, GB '433 discloses this element. GB '433 discloses a construction wherein "mattress underbody 1," which contains "a number of channels 2 extending transversely of the length of the mattress," is layered with the "intermediate layer of foam and a covering material disposed over that layer." GB '433 at 1:96; 3:95–100.
[6] The method of claim 5	<i>See</i> Claim 5, above.
[6.1] wherein forming the channel further comprises cutting foam out of the body.	GB '433 teaches "using a known cutting instrument . . . in such a way that the cutting instrument moves through this foam pad in a longitudinal direction across the entire width thereof, following the contour of the desired channels and webs." GB '433 at 2:22–30.
[8] The method of claim 5 further comprising	<i>See</i> Claim 5, above.
[8.1] covering the mattress with one or more conventional mattress covering materials.	The mattress contains a "covering material" which "may be a base cover of plain material for the entire mattress which is then covered in the usual manner in a further attractive covering material." GB '433 at 3:95–105.

192. GB '433 anticipates and/or renders obvious claims 10 and 13 of the '935 patent under Plaintiffs' incorrect claim interpretation, as shown below:

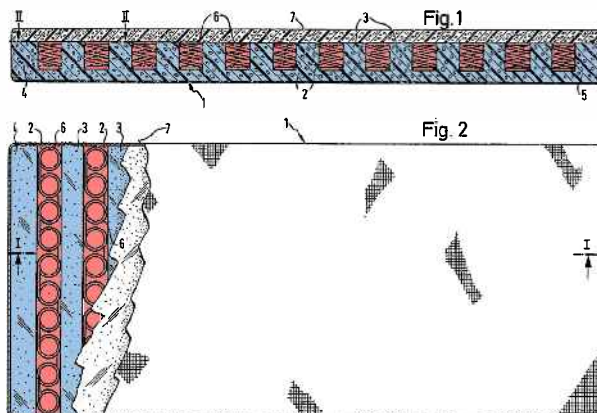
'935 Patent Claim Chart: GB '433	
[10] A method of manufacturing a mattress comprising:	<p>GB '433 is related to "manufacturing" of "mattresses of which a major part is formed from a foamed polymeric material." GB '433 at 1:13–14, 83; 2:56.</p> <p><i>See also:</i></p> <p>The "mattress . . . may be manufactured from a so-called hot foam." <i>Id.</i> at 3:25–26.</p>

HIGHLY CONFIDENTIAL – OUTSIDE COUNSEL EYES ONLY**'935 Patent Claim Chart: GB '433**

<p>[10.1] providing a plurality of rectangular foam pieces to form a body of foam shaped and sized for use as a mattress;</p>	<p>GB '433 provides that “mattress underbody 1,” which is a “body of foamed polymeric material,” along with “an intermediate layer of foam and a covering material disposed over that layer,” are combined to form a mattress “body”—<i>i.e.</i>, a “physical structure.” GB '433 at 1:96; 3:95–100. Mattress underbody 1 and the intermediate layer of foam are rectangular foam pieces shaped and sized for use as a mattress, as depicted in Figures 1 and 2.</p> 
<p>[10.2] locating a region of the body where increased support is desired;</p>	<p>GB '433 teaches that the “continuous wire spring elements 6”—<i>i.e.</i>, inserts—together with the “fixed foam webs” are strategically placed throughout the mattress body to “act as an additional reinforcement” to the mattress body and provide increased support. GB '433 at 2:85–95; 3:69–74.</p>
<p>[10.3] assembling the rectangular foam pieces to form the body having a channel in the region; and</p>	<p>Under Plaintiffs’ interpretation of the claims, GB '433 discloses this element. GB '433 discloses a construction wherein “mattress underbody 1,” which contains “a number of channels 2 extending transversely of the length of the mattress,” is layered with the “intermediate layer of foam and a covering material disposed over that layer.” GB '433 at 1:96; 3:95–100.</p>
<p>[10.4a] affixing at least one insert having planar top and bottom surfaces into the channel,</p>	<p>“[I]nto the channels of the foam mattress underbody 1 thus produced there are inserted continuous wire spring elements 6. . . .” GB '433 at 3:69–74. The inserts are “held on two sides by the fixed foam webs.” <i>Id.</i> at 2:85–88. The inserts have planar top and bottom surfaces, as depicted in Figures 1 and 2.</p>

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'935 Patent Claim Chart: GB '433



See also:

“According to the present invention there is provided a mattress or the like comprising a body of foamed polymeric material provided in one face thereof with a plurality of substantially parallel channels separated by webs therebetween, each said channel running completely across the width or the length of said body, being open at each end, and having a depth taking up a major portion of the thickness of said body . . . and a plurality of springs which lie adjacent one another within each said channel . . .” *Id.* at 1:63–79.

“[C]ontinuous wire spring elements” (*i.e.*, inserts) are “put into the channels” and secured from above by “the padding layer” which is “glue[d] on.” *Id.* at 2:114–116.

[10.4b] wherein the channel has a physical shape configured to receive the at least one insert,

The channels are configured to receive the “continuous wire spring elements 6,” as depicted in Figures 1 and 2.

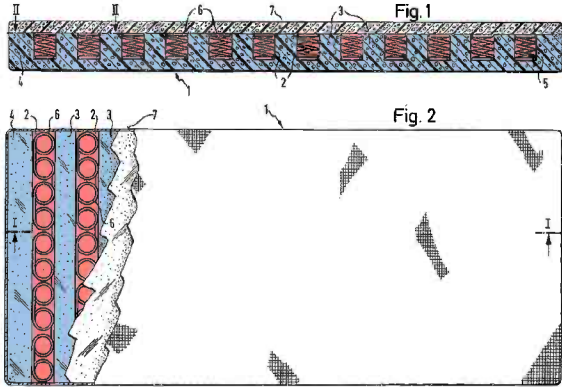
[10.4c] the insert having a different mechanical property than the body of foam,

GB '433 teaches that the “continuous wire spring elements 6”—*i.e.*, inserts—together with the “fixed foam webs” are strategically placed throughout the mattress body to “act as an additional reinforcement” to the mattress body and provide increased support. GB '433 at 2:85–95; 3:69–74.

[10.4d] and wherein the insert does not entirely fill the channel.

Under Plaintiffs’ interpretation of the claims, GB '433 discloses this element. While the spring elements fill the channel to the surface, the spring elements do not fill the channel laterally. That is, there are gaps in the wire making up the springs.

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'935 Patent Claim Chart: GB '433	
	 <p>To the extent this limitation is not expressly or inherently disclosed in GB '433, it would be obvious to a person of ordinary skill in the art, as explained below.</p>
[13] The method of manufacturing a mattress of claim 10, wherein	See Claim 10, above.
[13.1] affixing at least one insert into the channel comprises applying adhesive, heat, or frictional restraint.	<p>The inserts are “held on two sides by the fixed foam webs.” <i>Id.</i> at 2:85–88.</p> <p><i>See also:</i></p> <p>“[C]ontinuous wire spring elements” (<i>i.e.</i>, inserts) are “put into the channels” and secured from above by “the padding layer” which is “glue[d] on.” <i>Id.</i> at 2:114–116.</p> <p>To the extent this limitation is not expressly or inherently disclosed in GB '433, it would be obvious to a person of ordinary skill in the art, as explained below.</p>

(i) Obviousness based on GB '433

193. To the extent any of the limitations of these claims are not expressly or inherently disclosed in GB '433, the asserted method claims would have been obvious to a person of ordinary skill in the art in light of GB '433 alone, as well as obvious over GB '433 in combination with one or more of the other references discussed in this report, including those identified below. A person of ordinary skill in the art would have been motivated to combine

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GB '433 with any of these references, and would have had a reasonable expectation of success in doing so, for the reasons described below. *See infra* Section VIII.E.

1) It would have been obvious to modify GB '433 to have inserts that do not entirely fill the channel

194. To the extent GB '433 is assumed not to expressly or inherently disclose that the “insert does not entirely fill the channel” as required by claim 10 of the '935 patent, modifying the inserts in GB '433 so they do not entirely fill the cavities would be an obvious modification to a person of ordinary skill in the art to achieve the claimed invention.

195. For example, configuring an insert to not entirely fill a recess was taught in, *e.g.*, in DE 3937214 (DE '214). As explained above, DE '214 teaches not entirely filling a channel (either laterally or to its full depth) “in order to produce [a] desired resistance pattern.” DE '214 at 8. Having the spring insert not fill the entire channel would be an obvious design option to selectively create the desired firmness profile on the surface of the mattress. It would have been obvious to combine the teachings of GB '433 with DE '214, as both relate to mattress design and both seek to provide selective firmness over the surface of a mattress.

196. Thus, it would have been obvious to modify GB '433 so that the spring inserts do not entirely fill the channel, as required by claim 10 of the '935 patent.

2) It would have been obvious to modify GB '433 to affix inserts in its channels using adhesive, heat, or frictional restraint

197. To the extent GB '433 is assumed not to expressly or inherently disclose “affixing” an insert, such as by adhesive, heat, or frictional restraint, it would have been obvious to modify GB '433 to combine it with that known element to yield the method claimed in the Asserted Claims, in light of the knowledge of a person of ordinary skill in the art. The idea of affixing inserts into channels was known in the art well before the Asserted Patents. *See generally supra* Section VIII. Indeed, the USPTO has found that affixing using adhesives or

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heat was an obvious matter of design choice. '935 FH, 10/17/2013 Office Action at 2; *see also* '935 FH, 4/9/2014 Office Action at 2; '620 FH, 9/11/2015 Office Action at 6. References such as Antinori disclose using adhesives to secure an insert in a channel. *See* Antinori at 4:22–27. It would have been obvious to a person of ordinary skill in the art to secure the inserts in GB '433 using adhesives, or any other known method of affixing inserts. This would have led to predictable results, such as a higher quality mattress that would withstand repeated use.

E. Obviousness Combinations

198. As explained above, each of several references anticipates the Asserted Claims. To the extent those prior art references are assumed not to anticipate the Asserted Claim, the subject matter of the claims would still have been obvious to a person of ordinary skill in the art at the time. Indeed, as shown in the charts above, each of the elements of the Asserted Claims were well known in the prior art at the time of the alleged invention, and it would have been obvious to modify any of the above references to include any element. The elements of the claims are a matter of simple design choice—one of a finite number of known, alternative designs to solve known problems.

199. For example, during prosecution of the Asserted Patents and related patents, the USPTO found that several limitations of the Asserted Claims were obvious to a person of ordinary skill in the art, including:

- Forming channels by cutting or molding, '173 FH, 7/31/2003 Office Action at 2 (“The method of forming the channels whether by cutting or molding is an obvious matter of design choice.”); *see also* '763 FH, 8/7/2006 Office Action at 4;
- Providing a mattress cover, '173 FH, 7/31/2003 Office Action at 2 (“[I]t is well known to provide a mattress cover in order to protect the mattress and give it aesthetic appeal.”); *see also* '763 FH, 8/7/2006 Office Action at 4; '689 FH, Office Action at 6;
- Providing a plurality of channels, '173 FH, 3/9/2004 Office Action at 2–3 (“It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a plurality of channels, as taught by Murphy in

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order to increase the level of comfort for a user.”); *see also* ’763 FH, 2/5/2007 Office Action at 5 (“It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide a plurality of channels, as taught by Scott et al in order to provide additional support for a person lying on the mattress.”);

- Providing inserts in a channel of a foam body, ’763 FH, 2/5/2007 Office Action at 4–5 (“It would have been obvious to one having ordinary skill in the art at the time the invention was made to provide springs within a channel of a foam body, as taught by Boyd et al in order to provide additional support for a person lying on the mattress.”);
- Affixing using adhesives or heat, ’935 FH, 10/17/2013 Office Action at 2 (“The use of adhesives or heat for affixing would have been obvious matter of design choice, since the use of adhesives or heat are well-known for connecting or affixing members together.”); *see also* ’935 FH, 4/9/2014 Office Action at 2; ’620 FH, 9/11/2015 Office Action at 6;
- Inserting foam having a different mechanical characteristic, ’935 FH, 4/9/2014 Office Action at 2 (“It would have been obvious to one of ordinary skill in the art to provide a foam insert having a different mechanical characteristic, since Boyd teach that providing foam of different mechanical characteristics allows for a different firmness dependent upon a user.”);
- Providing foam inserts, ’620 FH, 9/11/2015 Office Action at 6 (“It would have been obvious to one of ordinary skill in the art to provide foam inserts, since Scott et al teaches that foam inserts provide a desired firmness for different parts of the body.”).

200. A person of ordinary skill in the art would have been motivated to combine any of the references identified above to achieve the alleged invention(s) of the Asserted Claims. Any such combination of references would have been obvious to a person of ordinary skill in the art at the time of the Asserted Patents. There was a reason to combine elements from different mattresses and mattress manufacturing methods to achieve a mattress with increased comfort and support. The concept of obtaining a non-uniform force profile for a mattress has long been known. It would be obvious and logical to apply different known techniques in order to achieve a non-uniform force profile. Because both the goal of achieving a non-uniform force profile and the method of achieving such a profile using channels and inserts were well known in the art, any combination of the above references would be within the knowledge and skill of a person of

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ordinary skill in the art. Further, no such combination produces any unexpected results. *See Gladney Tr.* at 195:10–196:3.

201. Other motivations or reasons to combine the above references include common knowledge, common sense, predictability, expectations, industry trends, design incentives or need, market demand or pressure, and market forces. For example, as explained above in the claim charts, the following claim concepts were well within the knowledge of a person of ordinary skill in the art at the time of the Asserted Patents:

- channels on the surface of a body of foam;
- one or more inserts affixed in the channels;
- inserts reinforcing a body of foam;
- a material covering and securing inserts within a channel;
- an insert either entirely filling or not entirely filling a channel;
- forming a channel by assembling rectangular foam pieces;
- cutting or molding channels in addition to forming a channel by assembling rectangular foam pieces;
- locating a region of a body where increased support is desired;
- covering a mattress with a covering material; and
- affixing an insert using adhesive, heat, or frictional restraint.

The market forces of producing an improved, comfortable, and supportive mattress would have driven a person of ordinary skill in the art to try all known potential options, with a reasonable expectation of success. That is, market forces in the industry, and the desire to improve features and performance, would motivate the addition of features to systems as they become available, become less expensive, become more commonly used, provide better performance, reduce costs, size or weight, or predictably achieve other clearly desirable results.

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202. Furthermore, all of the references charted above come from the exact same field: mattresses and methods of manufacturing mattresses. The problems sought to be solved by the identified references and systems were the same ones that had already been solved in the prior art. Indeed, the Asserted Claims recite ones of a fine number of well known, available alternatives to solve these known problems. The Asserted Claims simply combine previously known methods in a way that was explicitly and implicitly taught and suggested in the prior art. Implementing the teachings of the references identified herein would achieve improved performance, such as by creating a specific, non-uniform force profile on the surface of the mattress.

203. Ultimately, it would have been obvious to combine any of the prior art references identified above to include the elements of the Asserted Claims. I reserve the right to rely on any combination of references to demonstrate the obviousness of the Asserted Claims.

IX. SECONDARY CONSIDERATIONS OF NON-OBVIOUSNESS

204. I understand that the burden of presenting evidence of secondary considerations of non-obviousness is on the patentee. I also understand that the proponent of the evidence of secondary considerations bears the burden of showing that a nexus exists between the claimed features of the invention and the evidence offered to show non-obviousness.

205. I have reviewed the transcript of the deposition of inventor Richard Gladney. He was designated as Plaintiffs' corporate representative on "all facts and circumstances relating to any purported secondary considerations or objective evidence of non-obviousness relating to any of the asserted patents." Mr. Gladney did not identify any secondary considerations of non-obviousness of which Plaintiffs were aware. *See generally* Gladney Dep. at 193:10–198:25.

206. Casper's Interrogatory No. 19 to Plaintiffs asks Plaintiffs to "provide a detailed description of any secondary considerations or objective evidence of non-obviousness that you contend support the purported non-obviousness of such claim, including a detailed description of

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all evidence that supports, undermines, or otherwise relates to each allegedly secondary consideration.”

207. I have reviewed Plaintiffs’ responses to Interrogatory No. 19. Plaintiffs have not identified any arguments or evidence related to the secondary considerations of copying of the invention by others in the field, whether the invention was contrary to accepted wisdom of the prior art, expression of disbelief or skepticism by those skilled in the art upon learning of the invention, unexpected results, or acceptance through licensing of the claimed invention. Plaintiffs’ arguments for nonobviousness are limited to long-felt need, failure of others, commercial success, and praise by others. I disagree that any of these factors evidence nonobviousness of the claimed invention.

208. Plaintiffs first state that “[t]here was a long-felt need for the technology claimed in the Patents-in-Suit.” Plaintiffs’ Resp. to Interrogatory No. 19. As support, Plaintiffs cite only the deposition transcripts of Mr. Gladney and Mr. Holm. I reviewed these deposition transcripts and did not see any evidence that there was a long-felt but unmet need for the technology claimed in the Asserted Patents. The Asserted Patents simply applied known solutions to address an issue long known and recognized by other prior art references—“providing targeted support to enable optimal ergonomic conditions for sleep”—as explained throughout this report. *See id.* The Asserted Patents therefore did not resolve any previously unmet need in the art.

209. Plaintiffs next state that “[a]s one example of the failure of others, Casper tried and failed to make an ergonomically optimal mattress without inserts.” *Id.* As support, Plaintiffs cite only the deposition transcripts of Mr. Holm and Mr. Chapin. I reviewed these deposition transcripts and did not see any evidence that Casper tried and failed to make an ergonomically optimal mattress without inserts. Casper’s witnesses explained that the Gel-Trix polymer network is simply one of many “tool[s] to increase support” used in the Casper Wave mattress. Chapin Dep. Tr. at 64:4. Further, the Asserted Patents do not encompass all mattresses with

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“inserts,” as Plaintiffs’ analysis suggests. Plaintiffs have adduced no additional evidence of failure by others, and I am aware of none.

210. Plaintiffs next state that “[t]o the extent that the Casper Wave has been commercially successful, its success is driven by Serta Simmons’s patented technology.” Plaintiffs’ Resp. to Interrogatory No. 19. Even assuming that the Casper Wave is commercially successful and further assuming that the Casper Wave infringes the Asserted Patents, I understand that a nexus must be shown between the accused functionality and the success of the products. Plaintiffs do not provide any evidence showing that the success of the Casper Wave is due in any way to the accused functionality. Plaintiffs cite only the deposition transcripts of Mr. Morgan and Mr. Chapin. I reviewed these deposition transcripts and did not see any evidence of nexus. In fact, the cited deposition testimony of Mr. Morgan affirmatively demonstrates that there is no nexus. When asked whether he had any “evidence that [the] specific patented technology has driven purchasing behavior,” Mr. Morgan responded “NO.” Morgan Dep. Tr. at 96:1–13. Plaintiffs have adduced no additional evidence of nexus, and I am aware of none.

211. Finally, Plaintiffs allege “praise by others,” explaining that “Casper touts praise for the Casper Wave’s technology, including reproducing on its website the phrase ‘unprecedented ergonomic technology’ from an article in *Architectural Digest*.” Plaintiffs’ Resp. to Interrogatory No. 19. I understand that a nexus must be shown between the accused functionality and the praise by others. Plaintiffs do not provide any evidence showing that any alleged praise by others is directed to or resulting from the accused functionality, and I am aware of no such evidence.

212. I reserve the right to respond to any further secondary considerations of non-obviousness later raised by Plaintiffs.

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X. LACK OF WRITTEN DESCRIPTION

A. The Asserted Patents Lack Written Description of Filling Channels by Pouring Liquid Polymer

213. It is my opinion that, to the extent the claims are deemed to cover filling channels by pouring liquid polymer rather than by inserting an object, the claims are invalid under Section 112 for lack of written description, as the specifications of the Asserted Patents do not demonstrate that the inventor was in possession of an invention that included filling channels by pouring liquid polymer.

214. The Asserted Claims all require one or more “inserts” that are “affixed” in channels. *E.g.*, ’763 patent, cl. 1 (“a plurality of inserts, each insert . . . affixed within one of the plurality of channels”); ’763 patent, cl. 8 (“affixing an insert into the channel”); ’173 patent, cl. 5 (“affixing an insert into the channel”); ’935 patent, cl. 10 (“affixing at least one insert . . . into the channel”). Plaintiffs allege infringement of these limitations due to Casper pouring hot, liquid polymer gel into cuts on a layer of the mattress, which bonds within the layer to become the “Polymer Network.” To the extent the claims are deemed broad enough to cover this process, the claims are invalid because the Asserted Patents do not have sufficient written description for the full scope of the alleged invention. In particular, the written description of the Asserted Patents does not convey with reasonable clarity to those skilled in the art that inventor Richard Gladney was in possession, as of the filing date, of an embodiment in which channels are filled using a liquid that is allowed to cool to reinforce the mattress.

215. A person of ordinary skill in the art would understand that the “insert” discussed in the specifications of the Asserted Patents refers to a pre-existing object or construction, such as another piece of foam or an arrangement of springs, to be inserted into and “affixed” within a channel. *See, e.g.*, ’763 patent at 3:18–25. The word “affix,” for example, is defined as “attach or fasten something to something else.” Oxford English Dictionary at 11. A person of ordinary

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skill in the art would understand that the “insert” in the specifications that are “affixed” must already exist. Plaintiffs’ expert, Mr. Clift, testified that a person of ordinary skill in the art would understand an “insert” to be “an object [that] is placed in a cavity.” Clift Dep. Tr. at 142:2–15.

216. I have reviewed the specifications of the Asserted Patents and in every embodiment, the “insert” that is “affixed” in a channel is a pre-existing object that is placed into the channel. *E.g.*, ’763 patent at 3:20–24 (“For example, a foam body 12 may have one or more non-foam inserts, such as loose or pocketed springs, a string of connected pocket springs, or any other material or construction suitable for adding support to a surface of the mattress 10.”). Nowhere does the specification of the Asserted Patents suggest using a liquid to fill a channel. There is no evidence in the four corners of the Asserted Patents that Mr. Gladney was in possession of the idea of filling a channel with liquid.

217. Thus, if the claims are deemed to cover filling channels by pouring liquid polymer, then the claims are invalid because the specifications lack written description for the full scope of the claimed subject matter.

B. The Asserted Patents Lack Written Description of a Multi-Layer Mattress with Channels on the Surface of an Internal Layer

218. It is my opinion that, to the extent the claims are deemed to cover a multi-layer mattress with channels on the surface of an internal layer, the claims are invalid under Section 112 for lack of written description, as the specifications of the Asserted Patents do not demonstrate that the inventor was in possession of an invention that included a multi-layer mattress with channels only on the surface of an internal layer.

219. The Asserted Claims all require “channels” with an “insert.” The ’763 patent, for example, claims “at least one of the top and bottom surface [of the body] including a plurality of channels extending into the body perpendicularly therefrom.” ’763 patent, cl. 1. Plaintiffs allege infringement based on an *internal* layer of the Casper Wave mattress having voids cut into it.

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There are no channels on the top or bottom surface of the assembly of layers that makes up the Casper Wave, let alone on the surface of the overall mattress. To the extent the claims are deemed broad enough to cover this configuration, the Asserted Patents do not have sufficient written description for the full scope of the alleged invention. In particular, the written description of the Asserted Patents does not convey with reasonable clarity to those skilled in the art that inventor Richard Gladney was in possession, as of the filing date, of an embodiment in which the only channels are on an internal surface in the core of the assembled mattress.

220. All of the embodiments described in the specification of the Asserted Patents have channels on the surface of the main physical structure of the mattress—none shows, or even suggests, that the channels would be in the center of the mattress. For example, Figure 1 of the Asserted Patents shows a “body 12 formed of foam” that has four channels “disposed within the body.” ’763 patent at 2:6–7, 39–47. The embodiment shown in Figure 1 is a homogenous construction (not a multi-layer mattress). *Id.* at 2:27.

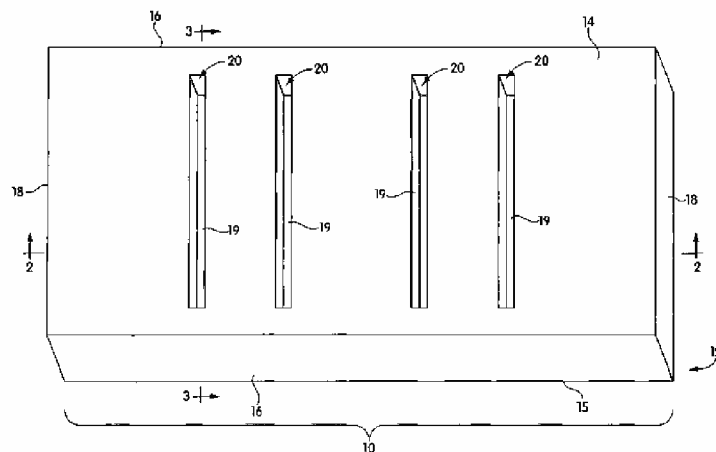


Fig. 1

221. Even where the specification discloses a multi-layer mattress, the channels are still on the top or bottom surface of the assembly of layers—never in the center of the assembled layers. For example, the ’763 patent states:

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While the embodiment in FIG. 1 [reproduced below] has a body 12 of homogenous construction, the body 12 could be formed of a combination of various types of foam with different mechanical characteristics. For example, the body 12 could be composed of multiple layers of such material, varying in respective mechanical characteristics, progressing in layer upon layer from the top surface 14 to the bottom surface 15.

'763 patent at 2:26–33. The colorized diagram below shows how this embodiment would look, which still has channels on the top surface of the assembly of layers:

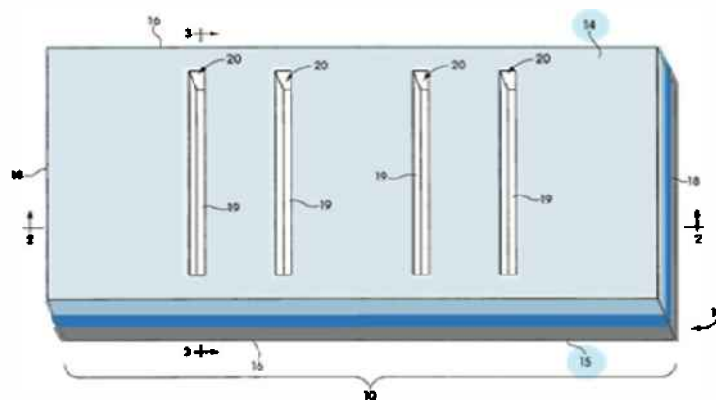


Fig. 1

222. I have reviewed the specifications of all three Asserted Patents and have not found any suggestion, let alone a description, of a multi-layer mattress with channels on the surface of an internal layer. I understand that Plaintiffs have argued that the '935 patent contains an embodiment (shown below) in which a “layer of additional material” is “added on top of the channels surface.” '935 patent at 3:52–60. But this disclosure does not say or suggest that an internal layer of a multi-layer mattress is the “body” of the mattress. And this embodiment is fundamentally different than the accused Casper Wave. The channels in this embodiment are still on the top surface of the main physical structure of the mattress. All that covers the channel is a thin mattress topper and a cloth-type mattress cover. *See id.* at 3:50–65. It does not show that the inventor was in possession of an embodiment in which the channels were in the center of the main physical structure of the mattress, as Plaintiffs are accusing in the Casper Wave.

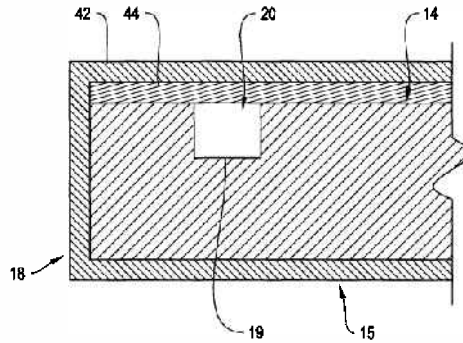
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Fig. 8

223. It is therefore my opinion that the Asserted Patents do not contain sufficient written description for the full scope of the claims, as they are interpreted to accuse the Casper Wave of infringing.

XI. NON-ENABLEMENT**A. The Asserted Patents Do Not Enable Filling Channels by Pouring Liquid Polymer**

224. It is my opinion that, to the extent the claims are deemed to read on the Casper Wave, the specifications of the Asserted Patents do not teach those skilled in the art how to make and use the full scope of the invention.

225. The Asserted Claims all require one or more “inserts” affixed in channels. *E.g.*, ’763 patent, cl. 1 (“a plurality of inserts, each insert . . . affixed within one of the plurality of channels”); ’763 patent, cl. 8 (“affixing an insert into the channel”); ’173 patent, cl. 5 (“affixing an insert into the channel”); ’935 patent, cl. 10 (“affixing at least one insert . . . into the channel”). Plaintiffs allege infringement of these limitations due to Casper pouring hot, liquid polymer gel into cuts on a layer of the mattress, which bonds within the layer to become the “Polymer Network.” To the extent the claims are construed broadly enough to cover this process, the Asserted Claims are not enabled.

226. As explained above with respect to the lack of written description (incorporated herein by reference), the Asserted Patents contain no disclosure or suggestion of forming a

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reinforcement in a foam mattress *in situ* by pouring and cooling liquid. It follows that there is not sufficient disclosure in the Asserted Patents to enable a person of ordinary skill in the art to make such an embodiment without undue experimentation. For example, there are no teachings in the Asserted Patents related to how a person of ordinary skill in the art would use a liquid gel to fill a channel. The disclosure of inserting a pre-existing object does little—if not nothing—to enable a person of ordinary skill in the art to develop a method of pouring a liquid that cools in a channel to form a reinforcing element to the mattress.

227. A person of ordinary skill in the art would face many challenges in developing a method of forming reinforcements *in situ* in a mattress. Because the Asserted Patents do not have *any* guidance on such embodiments, it would take undue experimentation for a person of ordinary skill in the art to overcome these challenges. For example, one issue that would arise would be how to handle the liquid flowing out of the channels in the mattress. The Asserted Patents speak nothing to this issue. Casper, in developing the Wave, required significant thought and experimentation to develop an effective “damming” system to stop the flow of liquid out of the cuts in the high-resiliency foam layer. Other issues that may arise in trying to enable such an embodiment would be:

- Oil leaching from the liquid as pressure is placed on it;
- Liquid spilling out of the top of the channels;
- Liquid expanding or contracting as it cools;
- Liquid not spreading evenly through a channel;
- Air bubbles forming in the liquid as it cools;
- The liquid burning the foam; and
- Developing a specific chemistry that will sufficiently bond with the foam.

Without any guidance, it would take undue experimentation to face and address each of these issues, as well as other issues that may arise.

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228. Many other factors further support my conclusion that the Asserted Patents do not enable this embodiment.

229. *The breadth of the claims.* The Asserted Claims, if construed to cover the Casper Wave, would be very broad. There are not any specific examples in the Asserted Patents that even begin to resemble the Casper Wave. The specification does not contemplate any embodiment in which the “insert” is not a pre-existing construction.

230. *The nature of the invention.* While the alleged underlying invention in the Asserted Patents (*i.e.*, channels with inserts) is relatively simple, the claims become considerably more complex if they are interpreted to cover the method of pouring a liquid in a channel and cooling it to form a reinforcing endoskeleton.

231. *The state of the prior art.* I am unaware of any prior art to the Asserted Patents that address how to develop a liquid fill for channels, and Plaintiffs have not identified any. Thus, a person of ordinary skill in the art would not be able to rely on any existing knowledge in the art about developing the chemistry and methods of filling channels with a liquid.

232. *The level of ordinary skill in the art.* The level of ordinary skill in the art is relatively low. For example, Plaintiffs’ expert has previously proposed that an individual with just an associate’s degree in design or manufacturing technology and a few years of experience in the mattress industry is a person of ordinary skill in the art. I note as well that the inventor, Richard Gladney, had no post-secondary education. A person of ordinary skill in the art, not having any advanced degrees or significant experience in the industry, would not have the tools to enable forming a reinforcing endoskeleton *in situ* without undue experimentation.

233. *The level of predictability in the art.* While the design of foam mattresses is a relatively predictable art, introducing chemistry and chemical engineering (as would be required to enable the full scope of the claims if they are deemed to cover the Casper Wave) adds additional complexity.

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234. *The amount of direction provided by the inventor.* The inventor provides no direction whatsoever on how to develop an embodiment in which channels are filled with liquid that cools and hardens.

235. *The existence of working examples.* There are no working examples in the specification directed to this embodiment.

236. For these reasons, a person of ordinary skill in the art would require undue experimentation to enable the full scope of the claims if the claims are deemed to cover the Casper Wave.

XII. INDEFINITENESS

A. “Channels extending into the body perpendicularly therefrom”

237. Claim 1 of the ’763 patent requires “at least one of the top and bottom surfaces [of the body] including a plurality of channels extending into the body perpendicularly therefrom.” The ’763 patent is indefinite because this claim, read in light of the specification delineating the patent, and the prosecution history, fails to inform, with reasonable certainty, those skilled in the art about its scope, as evidenced by Plaintiffs evolving interpretations of the “perpendicularly” limitation throughout this case.

238. During the preliminary injunction phase of the case, Casper argued that the claims asserted at that time were vulnerable to a validity attack because they were anticipated and/or obvious in light of Kennaway. Figure 4 in Kennaway depicts some channels having a trapezoidal shape. Plaintiffs argued that Kennaway did not disclose the limitation “at least one of the top and bottom surfaces [of the body] including a plurality of channels extending into the body perpendicularly therefrom” because the walls of the trapezoidal channel “extend into the body at a significant angle so as to accommodate removable inserts that are generally trapezoidal.” D.I. 51 at 18.

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239. In 2018, after Plaintiffs took the position in court that channels that “extend into the body at a significant angle” do not satisfy the asserted claims, Casper redesigned the cuts in the high-resiliency layer. I have reviewed the specifications for the redesigned contour cuts and have observed that the cuts extend into the layer at a significant angle. Yet I understand that Plaintiffs contend that the redesigned Casper Wave infringes the asserted mattress claims. In my opinion, Plaintiffs’ infringement contentions against the redesigned Casper Wave are directly contrary to Plaintiffs’ own position that channels that “extend into the body at a significant angle” do not satisfy the claims. D.I. 51 at 18. It is my opinion that the redesigned Casper Wave cannot infringe the claims under Plaintiffs’ own stated position that channels that “extend into the body at a significant angle” do not satisfy the claims.

240. Plaintiffs’ continued assertion of claim 1 of the ’763 patent against the redesigned Casper Wave further demonstrates that the “perpendicularly” limitation is indefinite. If the cuts in the redesigned Casper Wave were deemed to meet this limitation and the Kennaway prior art were deemed not to anticipate, then a person of ordinary skill in the art would be unable to discern with reasonable certainty what the bounds of this limitation are.

241. It is therefore my opinion that claim 1 of the ’763 patent is indefinite.

XIII. MATERIALITY

242. It is my opinion that Antinori and Regan are material to the patentability of the Asserted Patents.

243. I understand that applicants for patents have a duty to prosecute patent applications in the USPTO with candor, good faith, and honesty. I further understand that, under USPTO rules, Plaintiffs were required to disclose “all information known . . . to be material” to the patentability of claims under their “broadest reasonable construction.” 37 C.F.R. § 1.56(a). I also understand that a reference is “material” when a claim of a patent would not have issued if the USPTO had been aware of the reference.

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244. I also understand that representatives of Plaintiffs were aware of Antinori and Regan prior to and during the prosecution of the Asserted Patents—having cited them in other prosecutions—but Antinori and Regan were not disclosed to the USPTO during the prosecution of the Asserted Patents.

245. Specifically, as for Antinori, on March 20, 2002, Plaintiffs filed U.S. Patent App. No. 10/102,276 (“the ’276 application”), naming inventors Richard Gladney and Kevin Damewood.

246. The ’276 application was prosecuted by Ropes & Gray LLP, including attorney of record Edward Kelly.

247. Concurrent with filing the ’276 application, Dreamwell’s prosecuting attorneys submitted an Information Disclosure Statement identifying Antinori to the USPTO.

PTO/88/00A (10-0-0)
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Substitute for form 1449A/PTO		Complete if Known	
INFORMATION DISCLOSURE STATEMENT BY APPLICANT		Application Number	
(use as many sheets as necessary)		Filing Date	March 20, 2002
		First Named Inventor	Richard F. Gladney
		Art Unit	N/A
		Examiner Name	Not Yet Assigned
		Attorney Docket Number	SMCY-P01-077
Sheet	1 of 1		

U.S. PATENT DOCUMENTS					
Examiner Initials*	Cite No.	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Paragraphs or Relevant Figures Appear
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	AH	6,158,071	12/12/00	Wells	
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RS	AO	US 2001/0029632 A1	10/18/01	Parvin	

FOREIGN PATENT DOCUMENTS					
Examiner Initials*	Cite No.	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Paragraphs or Relevant Figures Appear
		Country Code ¹ -Number ² -Kind Code ³ (if known)			

* Applicant's unique citation designation number (optional). * See attached Kind Codes of USPTO Patent Documents at www.uspto.gov or MPEP 601.04. * Enter Office that issued the document, by the two-letter code (WIPO Standard ST.1). * For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the application number of the patent document. * Kind of document by the appropriate symbol as indicated on the document under WIPO Standard ST. 16-4 possible. * Applicant is to place a check mark here if English language Translation is attached.

OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS			
Examiner Initials*	Cite No.	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, page(s), volume/issue number(s), publisher, city and/or country where published.	Y ²

Examiner Signature	<i>Robert L. Lutz</i>	Date Considered	<i>February 28, 2003</i>
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* EXAMINER: Initial reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next open citation to applicant.

* Applicant's unique citation designation number (optional). * Applicant is to place a check mark here if English language Translation is attached.

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248. Plaintiffs identified Antinori to the USPTO in at least three continuation applications claiming priority to the '273 application: U.S. Patent App. Nos. 10/914,939; 11/805,097; and 12/542,380.

249. As for Regan, on November 10, 2004, Plaintiffs filed U.S. Patent App. No. 10/985,622 ("the '622 application"), naming inventor Don Hoffman.

250. The '622 application was prosecuted by Ropes & Gray LLP, including attorney of record Edward Kelly.

251. On September 29, 2006, the examiner identified Regan as relevant prior art in a Notice of References Cited.

Notice of References Cited		Application/Control No. 10/985,622	Applicant(s)/Patent Under Reexamination HOFMANN, DON	
		Examiner Robert G. Santos	Art Unit 3673	Page 1 of 1

U.S. PATENT DOCUMENTS					
*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2005/0120478 A1	06-2005	Hofmann, Don	005/400
*	B	US-6,345,401 B1	02-2002	Frydman, Larry G.	5/636
*	C	US-4,235,472	11-1980	Sparks et al.	297/392
*	D	US-4,161,045	07-1979	Regan, John J.	5/728
*	E	US-4,053,957	10-1977	Regan, John J.	5/727
*	F	US-3,950,797	04-1976	Bronstein, Jr., Edward L.	5/200.1
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

252. It is my opinion that both Antinori and Regan are material to the patentability of the Asserted Patents.

253. As explained above (*see, e.g.*, Sections VIII.C.2.b and VIII.D.2.b), Antinori anticipates and/or renders obvious at least one claim of each of the Asserted Patents under Plaintiffs' interpretation of the claims.

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254. As explained in Paragraph 102, Antinori establishes the unpatentability of claim 1 of the '763 patent under Plaintiffs' interpretation of the claims by at least a preponderance of the evidence. It is my opinion that, to the extent Plaintiffs' interpretation of the claims is within their broadest reasonable construction consistent with the specification (which would necessarily be the case if the Casper Wave is adjudged to infringe the claims—*i.e.*, if there is infringement), the USPTO examiner would not have allowed claim 1 of the '763 patent had he been aware of Antinori.

255. As explained in Paragraph 161, Antinori establishes the unpatentability of claim 8 of the '763 patent under Plaintiffs' interpretation of the claims by at least a preponderance of the evidence. It is my opinion that, to the extent Plaintiffs' interpretation of the claims is within their broadest reasonable construction consistent with the specification (which would necessarily be the case if the Casper Wave is adjudged to infringe the claims—*i.e.*, if there is infringement), the USPTO examiner would not have allowed claim 8 of the '763 patent had he been aware of Antinori.

256. As explained in Paragraph 162, Antinori establishes the unpatentability of claim 5 of the '173 patent under Plaintiffs' interpretation of the claims by at least a preponderance of the evidence. It is my opinion that, to the extent Plaintiffs' interpretation of the claims is within their broadest reasonable construction consistent with the specification (which would necessarily be the case if the Casper Wave is adjudged to infringe the claims—*i.e.*, if there is infringement), the USPTO examiner would not have allowed claim 5 of the '173 patent had he been aware of Antinori.

257. As explained in Paragraph 163, Antinori establishes the unpatentability of claim 10 of the '935 patent under Plaintiffs' interpretation of the claims by at least a preponderance of the evidence. It is my opinion that, to the extent Plaintiffs' interpretation of the claims is within their broadest reasonable construction consistent with the specification (which would necessarily

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be the case if the Casper Wave is adjudged to infringe the claims—*i.e.*, if there is infringement), the USPTO examiner would not have allowed claim 10 of the '935 patent had he been aware of Antinori.

258. As explained above (*see, e.g.*, Sections VIII.C.2.a and VIII.D.2.a), Regan anticipates and/or renders obvious at least one claim of each of the Asserted Patents under Plaintiffs' interpretation of the claims.

259. As explained in Paragraph 96, Regan establishes the unpatentability of claim 1 of the '763 patent under Plaintiffs' interpretation of the claims by at least a preponderance of the evidence. It is my opinion that, to the extent Plaintiffs' interpretation of the claims is within their broadest reasonable construction consistent with the specification (which would necessarily be the case if the Casper Wave is adjudged to infringe the claims—*i.e.*, if there is infringement), the USPTO examiner would not have allowed claim 1 of the '763 patent had he been aware of Regan.

260. As explained in Paragraph 149, Regan establishes the unpatentability of claim 8 of the '763 patent under Plaintiffs' interpretation of the claims by at least a preponderance of the evidence. It is my opinion that, to the extent Plaintiffs' interpretation of the claims is within their broadest reasonable construction consistent with the specification (which would necessarily be the case if the Casper Wave is adjudged to infringe the claims—*i.e.*, if there is infringement), the USPTO examiner would not have allowed claim 8 of the '763 patent had he been aware of Regan.

261. As explained in Paragraph 150, Regan establishes the unpatentability of claim 5 of the '173 patent under Plaintiffs' interpretation of the claims by at least a preponderance of the evidence. It is my opinion that, to the extent Plaintiffs' interpretation of the claims is within their broadest reasonable construction consistent with the specification (which would necessarily be the case if the Casper Wave is adjudged to infringe the claims—*i.e.*, if there is infringement), the

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USPTO examiner would not have allowed claim 5 of the '173 patent had he been aware of Regan.

262. As explained in Paragraph 151, Regan establishes the unpatentability of claim 10 of the '935 patent under Plaintiffs' interpretation of the claims by at least a preponderance of the evidence. It is my opinion that, to the extent Plaintiffs' interpretation of the claims is within their broadest reasonable construction consistent with the specification (which would necessarily be the case if the Casper Wave is adjudged to infringe the claims—*i.e.*, if there is infringement), the USPTO examiner would not have allowed claim 10 of the '935 patent had he been aware of Regan.

263. It is also my opinion that neither Antinori nor Regan are cumulative to information of record before the USPTO in the prosecution of the Asserted Patents. For example, both Antinori and Regan contain a more complete combination of the claim elements for claims 1 and 8 of the '763 patent, claim 5 of the '173 patent, and claim 10 of the '935 patent (under Plaintiffs' interpretation of the claims) than any single reference before the examiner.

264. With respect to claim 1 of the '763 patent, both Antinori and Regan contain a more complete combination of the elements “a plurality of inserts,” “each insert reinforcing the body,” and “at least one of the top and bottom surfaces including a plurality of channels extending into the body perpendicularly therefrom” (under Plaintiffs' interpretation of the claims) than any single reference before the examiner.

265. With respect to claim 8 of the '763 patent, both Antinori and Regan contain a more complete combination of the elements “locating a region of the body where increased support is desired,” “assembling the plurality of rectangular foam pieces to form the body having a channel in the region,” and “affixing an insert into the channel, the insert having a different firmness than the body of foam” (under Plaintiffs' interpretation of the claims) than any single reference before the examiner.

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266. With respect to claim 5 of the '173 patent, both Antinori and Regan contain a more complete combination of the elements “locating a region of the body where increased support is desired,” “affixing an insert into the channel the insert having a greater firmness than the body of foam,” and “wherein forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel” (under Plaintiffs’ interpretation of the claims) than any single reference before the examiner.

267. With respect to claim 10 of the '935 patent, both Antinori and Regan contain a more complete combination of the elements “locating a region of the body where increased support is desired,” “assembling the rectangular foam pieces to form the body having a channel in the region,” and “affixing at least one insert having planar top and bottom surfaces into the channel” (under Plaintiffs’ interpretation of the claims) than any single reference before the examiner.

268. It is therefore my opinion that Antinori and Regan are material to the patentability of the Asserted Patents.

269. I have also been asked to give my opinion on the following statement in the specification of the Asserted Patents: “There remains a need for a mattress that varies in terms of deflection to a given applied force.” '173 patent at 1:16–17. It is my opinion that this statement was unmistakably false in light of both Antinori and Regan, both of which were published prior to this statement being made in the application for the Asserted Patents.

270. Antinori discloses a mattress that varies in terms of deflection to a given applied force. For example, the Abstract of Antinori states: “Medial recesses receive postural inserts of relatively high ILD values, whereas transverse recesses at headed foot sections are aligned to define voids at the foot and head sections of the mattress to provide head and foot relief.” Antinori at Abstract. Antinori also explains that “the recesses 12a, 25a, and 13a, 26a are devoid of inserts and define respective transverse channels 51, 52 at head end (unnumbered) and foot

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end (also unnumbered) sections of the mattress 50 which desirably *reduce the softness of the overall mattress* 50 at these two regions.” *Id.* at 4:31–36 (emphasis added). The insert in the medial section of Antinori also makes it so the mattress varies in terms of deflection to a given applied force: “The multi-ply mattress 50 thereby affords *excellent postural support in the area of the insert* 40 while achieving *pressure relief at the head and foot sections* because of the channels 51, 52.” *Id.* at 4:44–47 (emphases added).

271. Regan also discloses a mattress that varies in terms of deflection to a given applied force. For example, Regan discloses ribs “to correspond in position to the shoulder area and buttocks area of the user to provide maximum support for body areas of greater weight.” Regan at Abstract. Due to the ribs, the Regan mattress will vary in terms of deflection to a given applied force: “The low compressibility of the ribs has the effect of decreasing the overall compressibility of the mattress at those points where the ribs are located.” *Id.* at 1:40–43. The quoted statement from the ’173 patent was therefore unmistakably false.

272. This statement (“There remains a need for a mattress that varies in terms of deflection to a given applied force.”) is also false in light of prior art products known to Mr. Gladney, as he testified to in his deposition. For example, Mr. Gladney testified that in the 1990s, Simmons manufactured a mattress with “cutouts to make a particular area softer than an area that wasn’t cut out, which would have been slightly firmer.” Gladney Dep. Tr. at 40:21–41:18. This means that the mattress would vary in terms of deflection to a given applied force. Mr. Gladney also testified that before 2000, the Simmons BackCare and Natural Care mattresses would “vary[] the firmness from one end to the other.” *Id.* at 61:9–62:12. The Natural Care mattress, for example, “had a latex core and a gel section,” so “it would have been a different firmness.” *Id.* at 61:22–62:3; *see also generally* Gladney Dep. Tr. at pp. 40–41, 60–64, 158, 164, 170–71. Given the existence of these mattresses, based on the testimony of Mr. Gladney, it was

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unmistakably false that at the time the Asserted Patents were filed, there “remain[ed] a need for a mattress that varies in terms of deflection to a given applied force.” ’173 patent at 1:16–17.

273. I was also asked to give my opinion on the following arguments made by Plaintiffs on August 9, 2004, during prosecution of the ’173 patent:

In sum, Boyd not only fails to provide any teaching or suggestion of assembling a plurality of rectangular foam pieces into a mattress that includes a channel as claimed by the Applicant, but Boyd also teaches that the use of multiple pieces to form a mattress has disadvantages. Thus, nothing in Boyd teaches or suggests the claimed invention of a method of manufacturing a mattress including forming a channel into a body of foam within a region where increased support is desired and affixing an insert into the channel, the insert having a greater firmness than the body of foam, wherein forming the channel comprises assembling a plurality of rectangular foam pieces into a mattress that includes the channel. . . .

Murphy lacks any such suggestion or teaching of an insert affixed within a channel that reinforces the body of the mattress. To the contrary, Murphy discloses a foam body mattress with selectively removable sections to create recesses in its top surface that remains unfilled at locations corresponding to protruding portions of a patient, for the purpose of aiding “in the prevention and treatment of decubitus ulcers and other tissue damage aggravated by pressure, and/or heat, and/or shearing.” See generally col. 1, l. 1 to col. 2, l. 44. While Murphy suggests the use of selectively removable sections or “block bodies” to create these recesses, Murphy further teaches that – instead of being formed of a material that reinforces the body – these sections are formed of a foam having the same composition as the foam of the surrounding mattress body. See col. 4, ll. 3–9, and claims 1, 3. Thus, instead of teaching the Applicant’s claimed multiple channels in a mattress each having affixed therein an insert that reinforces the body of the mattress, Murphy teaches to the contrary a mattress with (1) one or more recessed areas in the top surface that remain unfilled, and (2) other recessed areas fitted with block bodies of the same composition as the body.

’173 FH, 8/9/2004 Amendment at 5–7. In my opinion, these statements regarding Boyd and Murphy are belied by Antinori.

274. Unlike Boyd, Antinori discloses “assembling a plurality of rectangular foam pieces into a mattress that includes a channel as claimed by the Applicant” (under Plaintiffs’ interpretation of the claims). See Antinori at 4:15–27, Fig. 4. Contrary to the alleged teachings in Boyd “that the use of multiple pieces to form a mattress has disadvantages,” Antinori

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expressly teaches the advantages of constructing a mattress from multiple pieces of foam. *See, e.g., id.* at 2:25–30, 2:44–51, 3:23–25.

275. Similarly, Antinori contradicts the arguments Plaintiffs made regarding Murphy. In particular, the Antinori mattress “includes one or more inserts placed in the central or medial recesses.” Antinori at 3:10–12. The “groove, channel, or recess” receives an insert with a “relatively high Indentation Load Deflection (ILD) value,” which “affords excellent postural support in the area of the insert.” *Id.* at 4:10, 19–21, 44–47. Thus, unlike Murphy, the inserts do not have the “same composition” as the surrounding foam.

276. Finally, I was asked to give my opinion on the following arguments made by Plaintiffs on November 7, 2006, during prosecution of the ’763 patent:

Hoffman is directed to a mattress having a base member provided with cylindrical cavities whereupon cylindrical inserts are adapted to be placed into the cavities. These cavities or bores are centrally disposed within the base member and “extend through the interior” of the base member sometimes from the sides, but not on the top or bottom surface of the mattress. (*See Col. 3, Lines 21-22*). Figure 2 of Hoffman shows a divided base that again does not include a channel extending from its top or bottom surface. In particular, the base member in Figure 2 is divided “to facilitate placement of inserts” within the centrally disposed cavities. The Examiner admits that “Hoffman discloses channels extending from the side surface” and identifies the side surface of the base member as “side surface 16a” illustrated in Figure 1. In contrast, amended base claim 1 includes “at least one of the top and bottom surface including a channel extending into the body perpendicularly therefrom.” The channels extend perpendicularly from at least one of the top and bottom surface and the inserts are affixed within these top and/or bottom surface channels to reinforce the body. Thus, Hoffman does not teach or suggest all the elements of amended base claims 1

Applicant amends base claim 9 to include the limitation of former dependent claim 12 and more clearly recite “assembling the plurality of rectangular foam pieces to form the body having a channel in the region.” Boyd does not teach or suggest this step and, therefore, does not include all the elements of amended base claim 9.

’173 FH, 11/7/2006 Amendment at 6–7). In my opinion, these statements regarding Hoffmann and Boyd are belied by Antinori and Regan.

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277. Under Plaintiffs’ current interpretation of the claims, as explained above, both Antinori and Regan “include a channel extending from its top or bottom surface.” In both Antinori and Regan, “[t]he channels extend perpendicularly from at least one of the top and bottom surface and the inserts are affixed within these top and/or bottom surface channels to reinforce the body,” as Plaintiffs argued was not disclosed in Hoffmann. For example, Regan discloses “recess[es]” within the layers making up a multi-layer mattress that have “ribs” (*i.e.*, inserts) affixed therein. Regan at 3:5–38, 4:1–4.

278. Also, as discussed above with respect to prior art invalidity (*supra* Sections VIII.D.2.a and VIII.D.2.b), both Antinori and Regan disclose “assembling the plurality of rectangular foam pieces to form the body having a channel in the region,” as Plaintiffs are interpreting the claims in alleging infringement of the Casper Wave. Indeed, Plaintiffs have never disputed that both Antinori and Regan disclose this claim element. For example, during the preliminary injunction phase, in my Declaration in Support of Defendant Casper Sleep Inc.’s Opposition to Plaintiffs’ Motion for Preliminary Injunction, I showed that Antinori and Regan anticipated the asserted method claims, including the limitation “assembling the plurality of rectangular foam pieces to form the body having a channel in the region.” D.I. 46 at 72, 91–92. Plaintiffs, in response, did not argue that this feature was not present in Antinori and Regan. *See* D.I. 51 at 15–25.

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* * *

I understand that Plaintiffs may offer an infringement expert report as well as an expert report in response to this report, and I reserve the right to consider Plaintiffs' expert reports as well as any additional materials from this litigation, and to address them at trial or in any other way provided under the Court's schedule.

I declare under penalty of perjury that the foregoing is true and correct.

Executed this 11th day of May, 2018, in King, North Carolina.


Bernhard Kuchel